

REPAIRMANUAL2002-2008

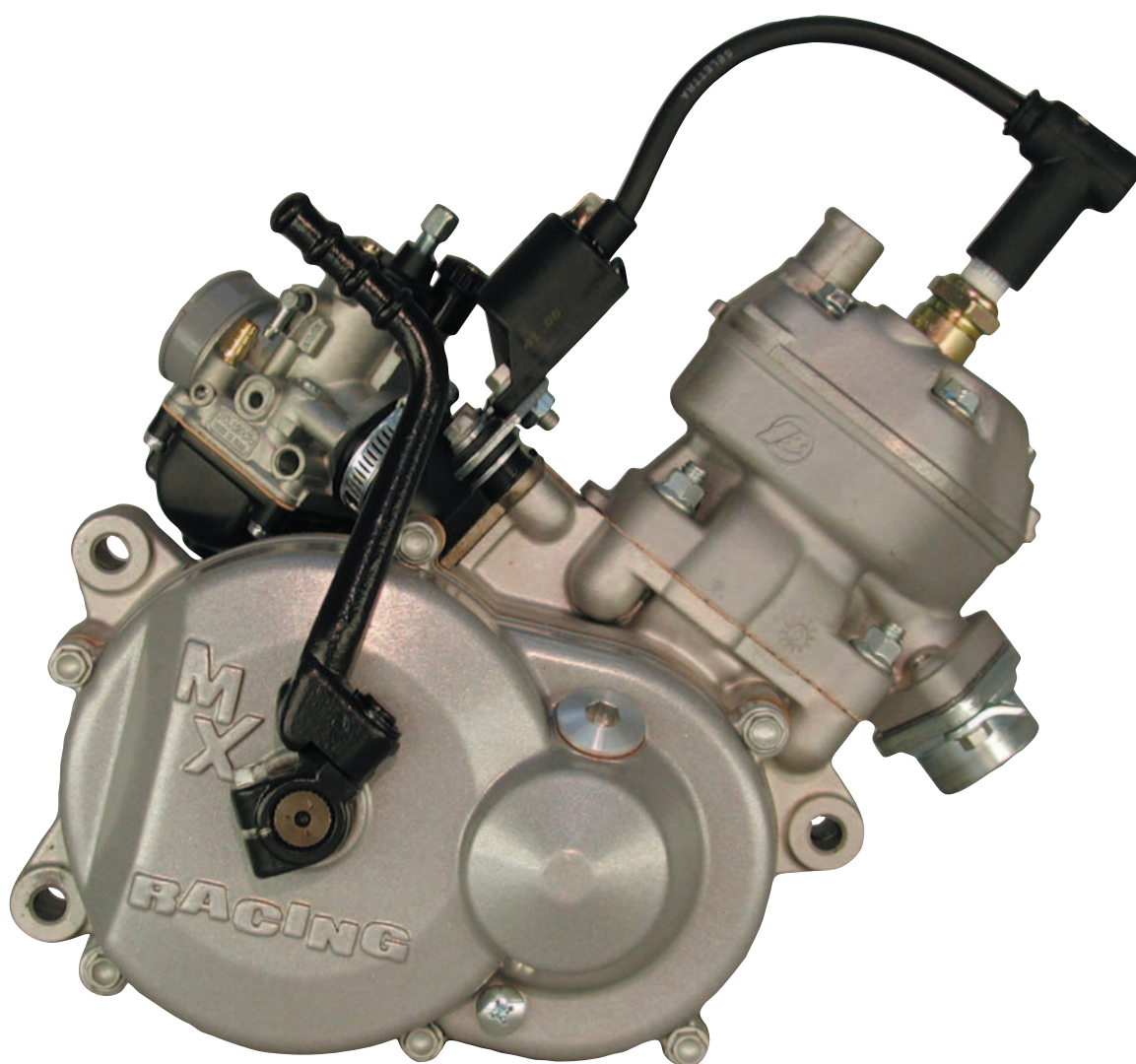
50 AC/LC

REPARATURANLEITUNG

MANUALE DI RIPARAZIONE

MANUEL DE REPARATION

MANUAL DE REPARACION



Art.NR.: 3.206.047-E

KTM

REPAIR MANUAL 2002-2008
50 AC/LC



KTM Group Partner



KTM

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IMPORTANT INFORMATION/UPDATING INSTRUCTIONS

To be able to continue using the existing loose-leaf repair instructions, simply print the following pages and insert them in the existing repair instructions:

1,3,7,9,13,46,61,63,84-88,89,98-101

Remove page (s)	Replace by page (s)	Insert page (s)	after page
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KTM REPAIR MANUAL IN LOOSE-LEAF FORM

STORING THE REPAIR MANUAL IN THE BINDER

- Put the index into the binder.
- Put the front page of the repair manual (210x297 mm) into the transparent pocket provided for this purpose on the outside of the binder.
- Put the spine label (170x45 mm) into the transparent pocket provided for this purpose on the spine of the binder.
- Put the summary list of contents (150x297 mm) into the transparent pocket provided for this purpose on the inside of the binder or insert this page on the beginning of the manual.
- Then insert the individual chapters of the manual between the sheets of the index according to the page number printed in the right bottom corner of each page.
Example: page no. 3-5, 3 = chapter 3, 5 = page 5. All pages with a page number that begins with the digit 3, for example, must be put under the index heading "Chapter 3".
- Index sheets that have not been marked with a certain chapter are for your personal convenience. The respective headings can be entered in the list of contents.

EXPLANATION - UPDATE

This repair manual contains the following supplements:

3.210.24-E	Repair Manual 50 AC/LC Basic version Model year 2002	5/2001
3.210.64-E	Updating of Rep.Manual 3.210.24-E Model year 2003 (Engine number with first digit „3“)	5/2002
3.206.010-E	Updating of Rep.Manual 3.210.24-E Model year 2004 (Engine number with first digit „4“)	5/2003
3.206.018-E	Updating of Rep.Manual 3.210.24-E Model year 2005 (Engine number with first digit „5“)	4/2004
3.206.028-E	Updating of Rep.Manual 3.210.24-E Model year 2006 (Engine number with first digit „6“)	7/2005
3.206.037-E	Updating of Rep.Manual 3.210.24-E Model year 2007 (Engine number with first digit „7“)	7/2006
3.206.047-E	Updating of Rep.Manual 3.210.24-E Model year 2008 (Engine number with first digit „8“)	6/2008

Modification / Updating:
Technical Specifications, Periodic Maintenance Schedule

INTRODUCTION

This repair manual offers extensive repair-instructions and is an up-to-date version that describes the latest models of the series. However, the right to modifications in the interest of technical improvement is reserved without updating the current issue of this manual.

A description of general working modes common in work shops has not been included. Safety rules common in the work shop have also not been listed. We take it for granted that the repairs are made by qualified professionally trained mechanics.

Read through the repair manual before beginning with the repair work.

⚠	WARNING	⚠
STRICT COMPLIANCE WITH THESE INSTRUCTIONS IS ESSENTIAL TO AVOID DANGER TO LIFE AND LIMB.		

!	CAUTION	!
NON-COMPLIANCE WITH THESE INSTRUCTIONS CAN LEAD TO DAMAGE OF MOTORCYCLE COMPONENTS OR RENDER MOTORCYCLES UNFIT FOR TRAFFIC !		

„NOTE“ POINTS OUT USEFUL TIPS.

Use only ORIGINAL KTM SPARE PARTS when replacing parts.

The KTM high performance engine is only able to meet user expectations if the maintenance work is performed regularly and professionally.



REG.NO. 12 100 6061

In accordance with the international quality management ISO 9001 standard, KTM uses quality assurance processes that lead to the highest possible product quality.

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REPLY FAX FOR REPAIR MANUALS

We have made every effort to make our repair manuals as accurate as possible but it is always possible for a mistake or two to creep in.

To keep improving the quality of our repair manuals, we request mechanics and shop foremen to assist us as follows:

If you find any errors or inaccuracies in one of our repair manual - whether these are technical errors, incorrect or unclear repair procedures, tool problems, missing technical data or torques, inaccurate or incorrect translations or wording, etc. - please enter the error(s) in the table below and fax the completed form to us at 0043/7742/6000/5349.

NOTE to table:

- Enter the complete item no. for the repair manual in column 1 (e.g.: **3.210.047-E**).
You will find the number on the cover page or in the left margin on each right page of the manual.
- Enter the corresponding page number in the repair manual (e.g.: **5-7c**) in column 2.
- Enter the current text (inaccurate or incomplete) in column 3 by quoting or describing the respective passage of the text. If your text deviates from the text contained in the repair manual, please write your text in German or English if possible.
- Enter the correct text in column 4.

Your corrections will be reviewed and incorporated in the next issue of our repair manual.

Item no. of repair manual	Page	Current text	Correct text

Additional suggestions, requests or comments on our Repair Manuals (in German or English):

Name mechanic/shop foreman:

Company/work shop:

GENERAL INFORMATION

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Carburetor adjustment

Basic information about original carburetor setting

The original carburetor setting was adapted for an altitude of approx. 500 meters (1600 ft.) above sea level, and the ambient temperature of approx. 20° C (68° F), mainly for off-road use and central European premium-grade fuel (ROZ 95).
Mixing ratio 2-stroke motor oil:super fuel up to model 2005 1:40, as of model 2006 1:60.

Basic information about change of the carburetor setting

Always start out from the original carburetor setting. Essential requirements are a clean air filter system, air-tight exhaust system and an intact carburetor. Experience has shown that adjusting the main jet, the idling jet and the jet needle is sufficient and that changes of other parts of the carburetor will not greatly affect engine performance.

RULE OF THUMB: high altitude or high temperatures ⇒ choose leaner carburetor adjustment
 low altitude or low temperatures ⇒ choose richer carburetor adjustment

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WARNING

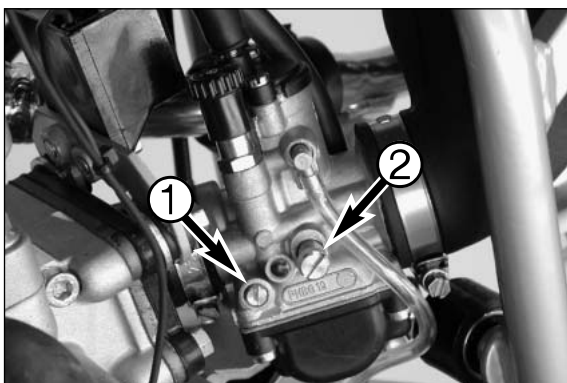
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- ONLY USE PREMIUM-GRADE GASOLINE ROZ 95 MIXED WITH HIGH-GRADE TWO-STROKE ENGINE OIL. OTHER TYPES OF GASOLINE CAN CAUSE ENGINE FAILURE, AND USE OF SAME WILL VOID YOUR WARRANTY.
- ONLY USE HIGH-GRADE 2-STROKE ENGINE OIL OF KNOWN BRANDS (I. E. Motorex Cross Power 2T).
- LESS OIL OR LOW-GRADE OIL CAN CAUSE EXCESSIVE WEAR OF THE PISTON. USING TOO MUCH OIL, THE ENGINE CAN START SMOKING AND FOUL THE SPARK PLUG.
- IN THE CASE OF A LEANER ADJUSTMENT OF THE CARBURETOR PROCEED CAUTIOUSLY. ALWAYS REDUCE THE JET SIZE IN STEPS OF ONE NUMBER TO AVOID OVERHEATING AND PISTON SEIZURE.

NOTE: If despite a changed adjustment the engine does not run properly, look for mechanical faults and check the ignition system.

Basic information on carburetor wear

As a result of engine vibrations, throttle valve, jet needle, and needle jet are subjected to increased wear. This wear may cause carburetor malfunction (e.g., rich mixture). Therefore, these parts should be replaced after 1000 hours of using.



Idling range – A

Operation with closed throttle valve. This range is influenced by the position of the mixture adjusting screw ① and the idle adjusting screw ②. Only make adjustments when the engine is hot.

To this end, slightly decrease the idling speed of the engine by means of the idle adjusting screw. Turning it clockwise produces a higher idling speed and turning the screw counterclockwise produces a lower idling speed. Create a round and stable engine speed using the mixture adjusting screw (basic position of the mixture adjusting screw = open 3.5/3 turns). Then adjust to the normal idling speed by means of the idle adjusting screw.

Opening up – B

Engine behavior when the throttle opens. The idle jet and the shape of the throttle valve influences this range. If, despite good idling-speed and part-throttle setting, the engine sputters and smokes when the throttle is fully opened and develops its full power not smoothly but suddenly at high engine speeds, the mixture to the carburetor will be too rich, the fuel level too high or the float needle is leaking.

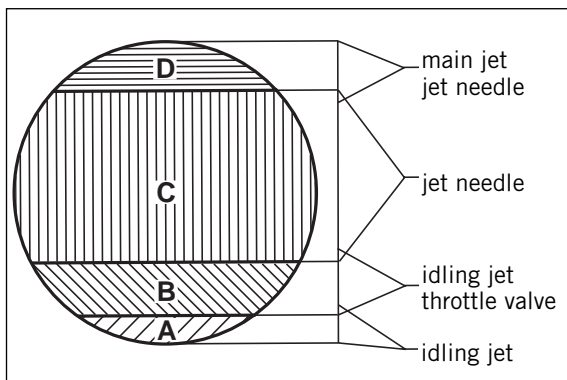
Part-throttle range – C

Operation with partly open throttle valve. This range is only influenced by the jet needle (shape and position). The optimum part-throttle setting is controlled by the idling setting in the lower range and by the main jet in the upper range. If the engine runs on a four-stroke cycle or with reduced power when it is accelerated with the throttle partly open, the jet needle must be lowered by one notch. If then the engine pings, especially when accelerating under full power at maximum engine revs, the jet needle should be raised.

If these faults should occur at the lower end of the part throttle range at a four-stroke running, make the idling range leaner; if the engine pings, adjust the idling range richer.

Full throttle range – D

Betrieb bei offenem Gasschieber (Vollgas). Dieser Bereich wird durch Operation with the throttle fully open (flat out). This range is influenced by the main jet and the jet needle. If the porcelain of the new spark plug is found to have a very bright or white coating or if the engine rings, after a short distance of riding flat out, a larger main jet is required. If the porcelain is dark brown or black with soot the main jet must be replaced by a smaller one.



CLEANING

Clean your motorcycle regularly in order to keep its painted finish looking shiny and new.

The best manner would be to use warm water that has been mixed with a commercially available washing detergent and a sponge. The hard dirt can be removed before with the help of a soft water jet.

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CAUTION

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NEVER CLEAN YOUR MOTORCYCLE WITH A HIGH-PRESSURED CLEANER OR A HIGH-PRESSURED WATER JET. OTHERWISE THE WATER MIGHT RUN INTO THE ELECTRICAL COMPONENTS, CONNECTORS, SHEATHED CABLES, BEARINGS, CARBURETOR ETC. AND CAUSE MALFUNCTIONS, I.E., LEAD TO THE PREMATURE DESTRUCTION OF THESE PARTS.

- You should use commercially available detergents to clean the motorcycle. Heavily soiled parts should also be cleaned with the help of a paint brush.
- Before cleaning with water, plug the exhaust pipe to prevent water ingress.
- After the motorcycle has been rinsed with a soft water jet, it should be dried by air pressure and a cloth. Then take a short drive until the engine has reached its operating temperature, and also operate the brakes. The heat also causes the water at the inaccessible parts of the engine and the brakes to evaporate.
- Slide back the protective covers on the handlebar-mounted instruments so that any water that may have seeped into this part of the motorcycle is allowed to evaporate.
- After the motorcycle has cooled down, oil and grease all the gliding bearing parts. Also treat the chain with a chain spray.
- To prevent failures in the electric system, you should treat the short circuit button with a contact spray.

STORAGE

If you want to put your motorcycle away for longer periods of time, please observe the following instructions:

- Clean motorcycle thoroughly (see chapter: CLEANING)
- Change engine oil (old engine oil contains aggressive contaminations).
- Check antifreeze and amount of cooling liquid.
- Let the engine warm up again, close fuel tap and wait until the engine dies off by itself. In this way, the carburetor jets are prevented from becoming resin-clogged by the old fuel.
- Remove spark plug and fill in approx. 5 ccm of engine oil into the cylinder through the opening. Actuate kick-starter 10 times in order to distribute the oil onto the cylinder walls and mount the spark plug.
- Let fuel flow out of tank into an appropriate basin.
- Correct tire pressure.
- Lubricate bearing points of the control levers, foot rests, etc. as well as the chain.
- The storage place should be dry and not be subject to overly great temperature fluctuations.
- Cover the motorcycle with an air permeable tarpaulin or blanket. Do not use non-air-permeable materials, as possible humidity might not be able to escape and thereby cause corrosion.

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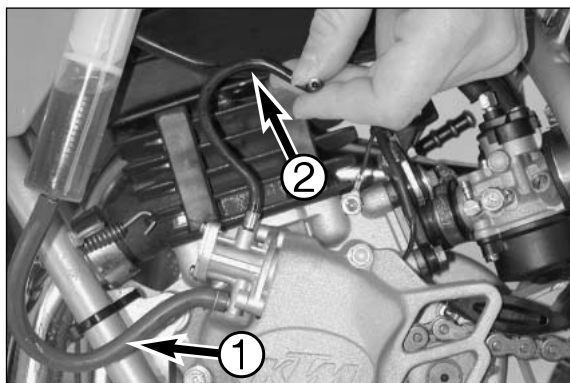
CAUTION

!

IT WOULD BE VERY BAD TO LET THE ENGINE RUN FOR A SHORT TIME DURING THE STORAGE PERIOD. THE ENGINE WOULD NOT GET WARMED UP ENOUGH AND THE THUS DEVELOPED STEAM WOULD CONDENSE DURING THE COMBUSTION PROCESS AND CAUSE THE EXHAUST TO RUST.

USE AFTER PERIOD OF STORAGE

- Fill up tank with fresh fuel.
- Check motorcycle as before each start (see driving instructions)
- Take a short, careful test ride first.

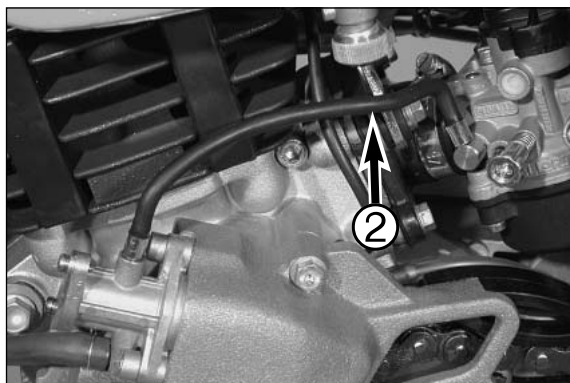


Bleeding oilpump for separate lubrication up to model 2003

Clamp oil lines ① and ② as shown.

Add 2 stroke engine oil (for example Motorex Cross Power 2T) with a syringe until the bubble-free oil starts to leak out of the line ②.

After bleeding the oil pump, mount both oil lines and fill the oil tank with 2 stroke engine oil (for example Motorex Cross Power 2T).

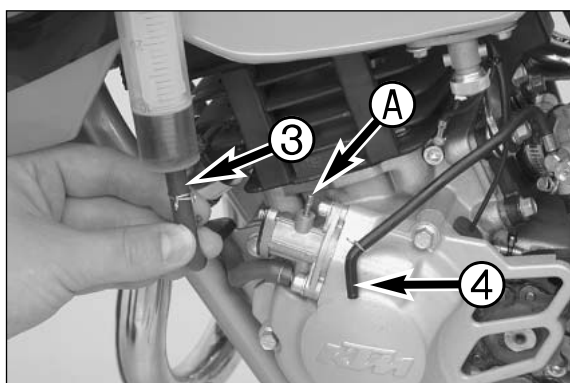


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CAUTION

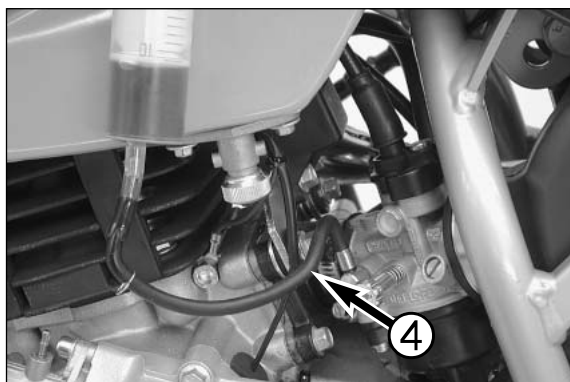
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HOSE ② LEADING FROM THE OIL PUMP TO THE CARBURETOR MUST BE INSTALLED WITHOUT KINKS.



Bleeding the oil pump for the separate lubrication from the 2004 model

Disconnect the oil line ③ from the oil tank and oil line ④ from the oil pump. Add two-stroke engine oil for separate lubrication with a syringe until the bubble-free oil leaks out of hole A on the oil pump. Connect the oil line ② to the oil tank. Use the syringe to bleed the oil line ④ to the carburetor and connect to the oil pump.



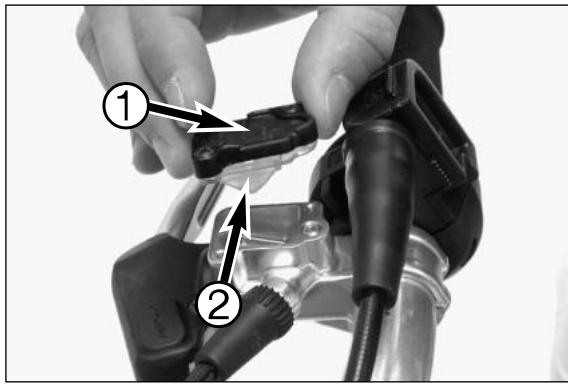
Afterwards, fill the oil tank with two stroke engine oil (e.g.: Motorex Cross Power 2T).

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CAUTION

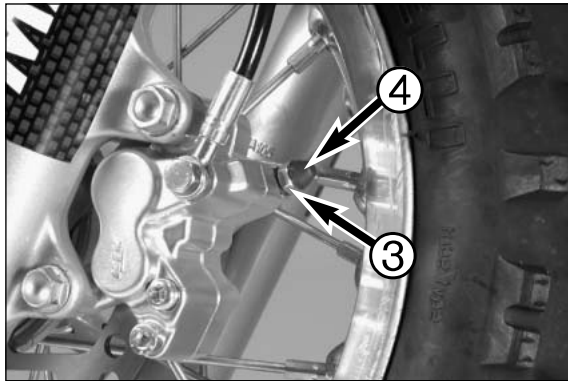
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ALWAYS MAKE SURE YOU RUN THE OIL HOSES WITHOUT KINKS.

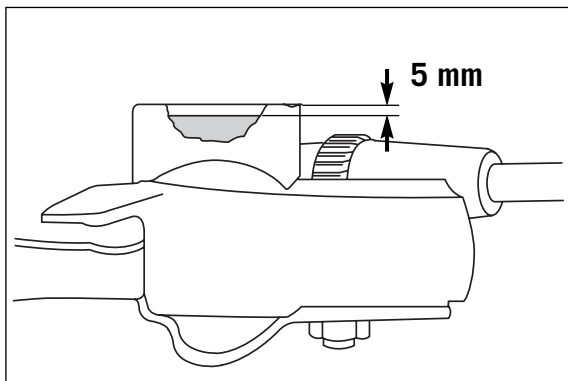


Changing front brake fluid (not Mini Adventure)

- Move the hand brake cylinder into horizontal position.
- Disassemble the cover ❶ together with the rubber boot ❷ from the brake fluid reservoir.
- Press the brake caliper pistons all the way back.
- Use a syringe to extract the used brake fluid and add fresh DOT 5.1 brake fluid (Motorex Brake Fluid DOT 5.1).



- Use a commercial extractor (shop equipment) to extract the used brake fluid out of the system through the bleeder screw ❸ on the brake caliper. Make sure the brake fluid reservoir is always filled with enough fresh brake fluid.
- Tighten the bleeder screw ❸ and attach the dust cap ❹ again.



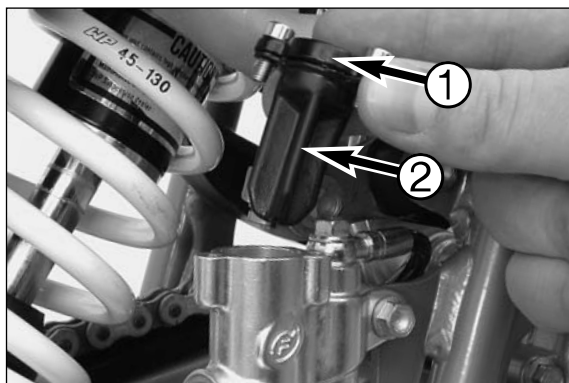
- Add DOT 5.1 brake fluid (Motorex Brake Fluid DOT 5.1) up to 5 mm under the top edge of the reservoir. Remount the rubber boot, cover and screws.
- Wash off any overflowing or spilled brake fluid with water.
- Actuate the hand brake lever until you feel the point of pressure.

!

CAUTION

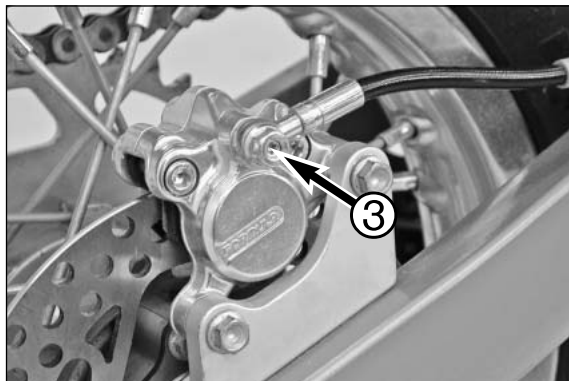
!

- NEVER USE DOT 5 BRAKE FLUID. IT IS BASED ON SILICONE OIL AND DYED PURPLE. GASKETS AND BRAKE HOSES WILL BE DAMAGED IF DOT 5 BRAKE FLUID IS USED.
- BRAKE FLUID CAN CAUSE SKIN IRRITATIONS. AVOID COMING INTO CONTACT WITH THE SKIN OR EYES. IF BRAKE FLUID SPLASHES INTO YOUR EYES, RINSE THOROUGHLY WITH WATER AND CONSULT A DOCTOR.
- MAKE SURE NO BRAKE FLUID COMES INTO CONTACT WITH PAINTED PARTS SINCE BRAKE FLUID WILL CORRODE THE PAINTWORK!
- ONLY USE CLEAN, NEW BRAKE FLUID FROM TIGHTLY SEALED CONTAINERS.

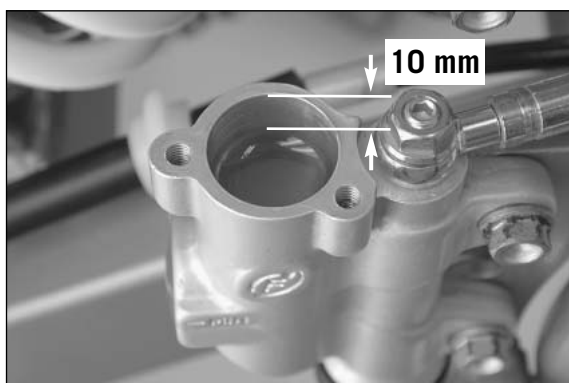


Changing rear brake fluid (50 SX, 50 Supermoto)

- Move the vehicle in a vertical position.
- Disassemble the cover ① together with the rubber boot ② from the brake fluid reservoir.
- Press the brake caliper pistons all the way back.
- Use a syringe to extract the used brake fluid and add fresh DOT 5.1 brake fluid (Motorex Brake Fluid DOT 5.1).



- Completely remove the bleeder screw ③ .
- Extract the old brake fluid from the system using the bleeder syringe 503.29.050.000. Always make sure that the brake fluid reservoir is filled with sufficient fresh brake fluid.
- Mount the bleeder screw ③ .



- Add DOT 5.1 brake fluid (Motorex Brake Fluid DOT 5.1) up to 10 mm under the top edge of the reservoir. Remount the rubber boot, cover and screws.
- Wash off any overflowing or spilled brake fluid with water.
- Actuate the foot brake lever until you feel the point of pressure.

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CAUTION

!

- NEVER USE DOT 5 BRAKE FLUID. IT IS BASED ON SILICONE OIL AND DYED PURPLE. GASKETS AND BRAKE HOSES WILL BE DAMAGED IF DOT 5 BRAKE FLUID IS USED.
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Checking brake pads and brake disks

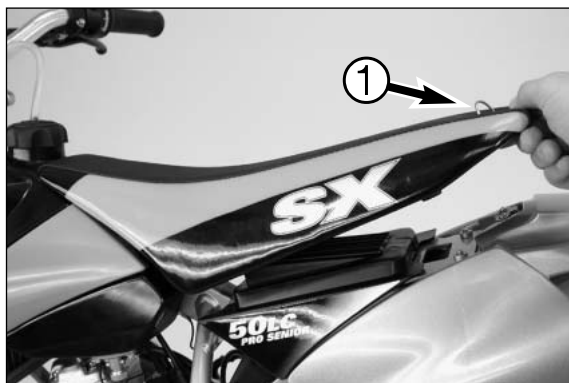
- See Owner's Manual

REMOVING AND REFITTING ENGINE

3

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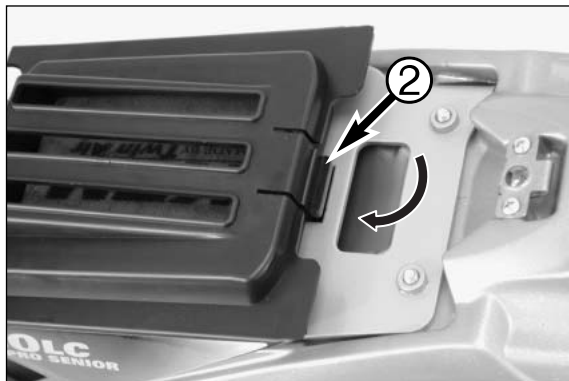


Removing the engine

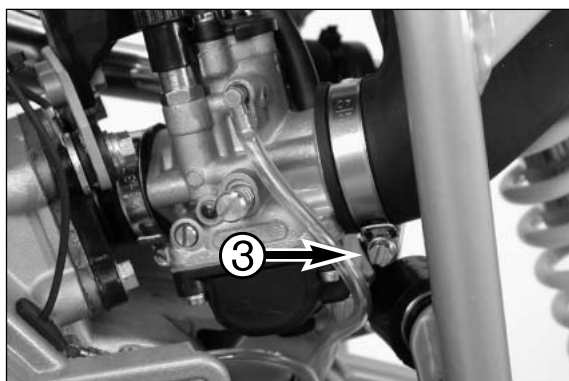
NOTE: the following steps are shown on a model with LC-engine, on a model with AC-engine a few works are not necessary like draining coolant liquid, removing and mounting the radiator and the radiator shield, bleeding the cooling system.

Clean the entire vehicle thoroughly before removing the engine.
To avoid burns, allow the motorcycle to cool before starting to work.

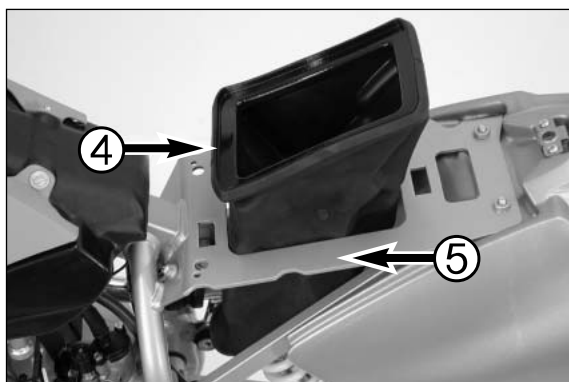
- Jack up the motorcycle on a sturdy work stand.
- Turn quick release ❶ on the seat 180°, lift back of seat slightly and pull back.



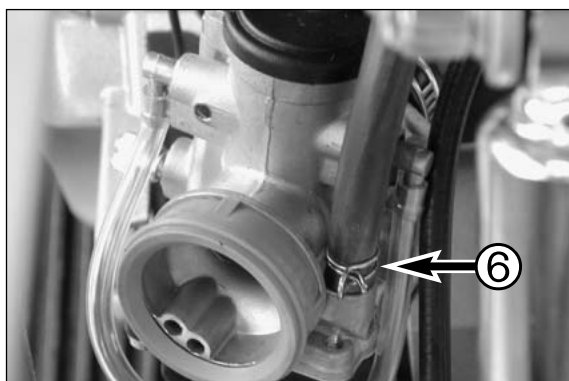
- Remove the cover of the air filter by reaching through the recess in the panel and pushing the locating tab 2 forwards with your finger.
- Remove air filter element.



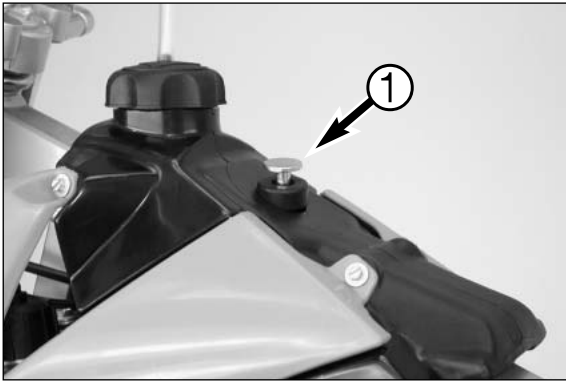
- Loosen hose clamp ❸ on the air filter box of the carburetor and remove air filter box.



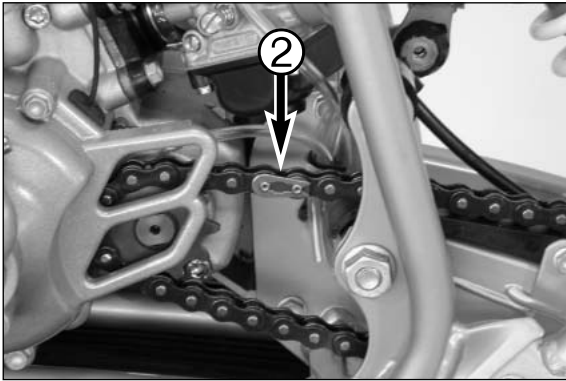
- Pull air filter box ❹ up through the retaining bracket ❺ by deforming it.



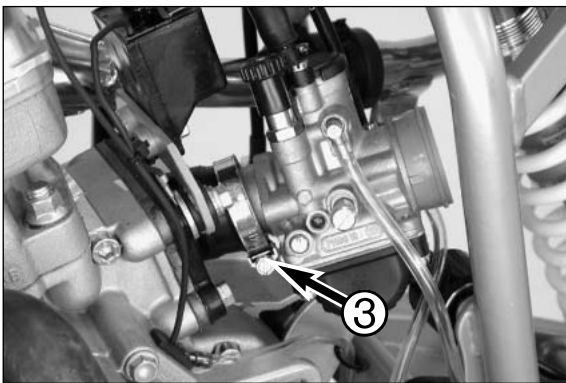
- Close fuel cock and disconnect fuel hose ❻ from the carburetor.



- Loosen retaining bolt on tank ① and remove from tank together with the rubber grommet.
- Lift tank from the frame.

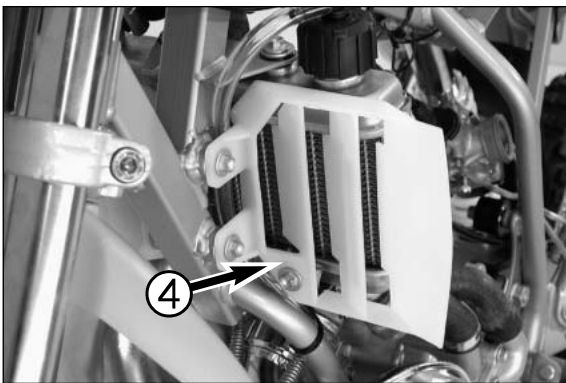


- Open chain joint ② and remove chain.

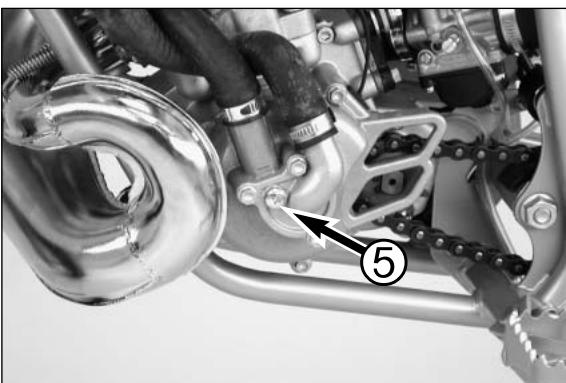


- Loosen hose clamp ③ of the intake flange on the carburetor, pull carburetor back and swing to the side.

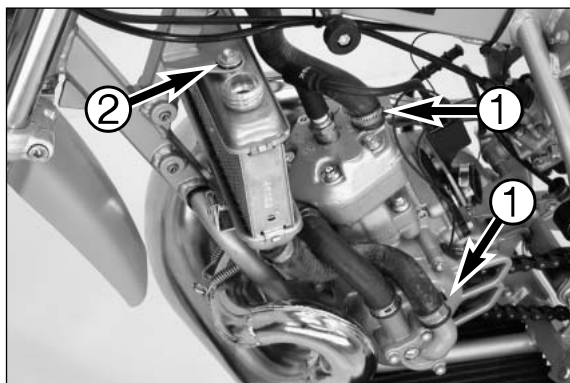
NOTE: if the carburetor is not being serviced, it does not need to be removed - the carburetor openings should however be covered with a clean cloth and the gasoline drained from the float chamber.



- Remove radiator shield on the right and left ④.



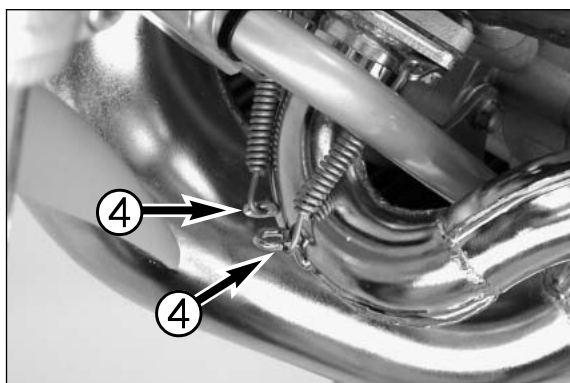
- Unbolt radiator cap, open drain plug ⑤ and allow cooling fluid to drain into a receptacle. Then remount the drain plug with a new sealing ring and tighten (5 Nm/4 ft.lb).



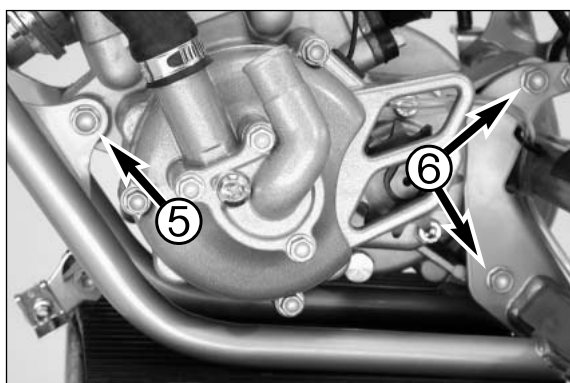
- Loosen hose clamp ❶ and pull both hoses from their connections.
- Unbolt radiator retaining bolt ❷ and laterally remove radiator with water hoses from the frame.



- Carefully pull socket connector ❸ apart.



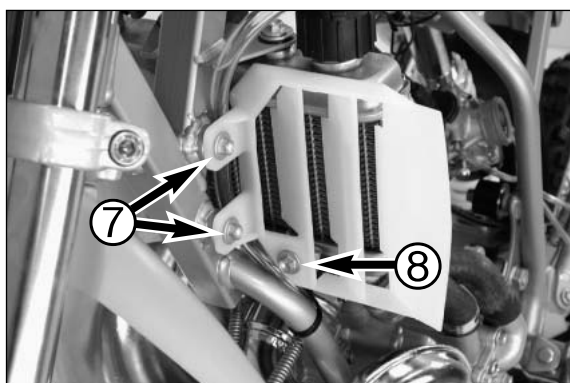
- Detach both exhaust springs ❹ with a suitable wrench, remove springs.
- Unbolt the exhaust bracket on the right and pull exhaust off towards the front.



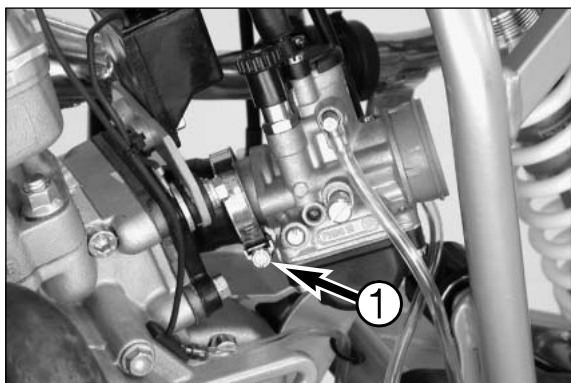
- Loosen engine mounting bolts ❺ and ❻, lift engine from the frame.

Installing the engine

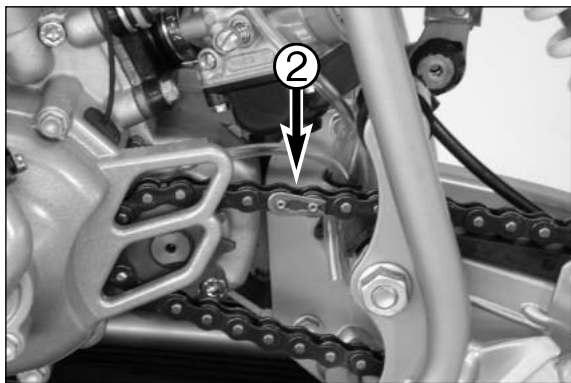
- Lift engine into the frame and fasten with bolt ❺ (M8x65 with nut) and 2 bolts ❻ (M8x55).
- Tighten bolts to 30 Nm (22 ft.lb).
- Mount exhaust, insert springs ❹ and tighten bolt for exhaust bracket M6x15 on the right.
- Carefully connect socket connector ❸.
- Position radiator in the frame and tighten the radiator retaining bolts ❷ (M6x10 with washer 18/6,5/1,5) to 10 Nm (7 ft.lb). Connect hoses and tighten hose clamps ❶.
- Fill cooling liquid (total filling amount approx. 0,5 liter).
- Mount radiator shield on the right and left.



NOTE: bolts ❷ (M6x10) are bolted onto the side of the frame, bolt ❸ (M6x15) is bolted into the radiator bracket.

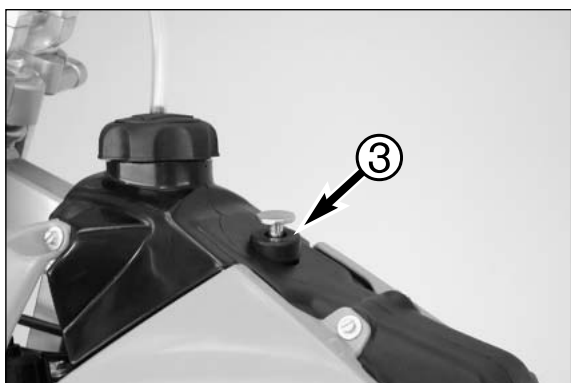


- Install carburetor on the intake flange and tighten hose clamp ❶.

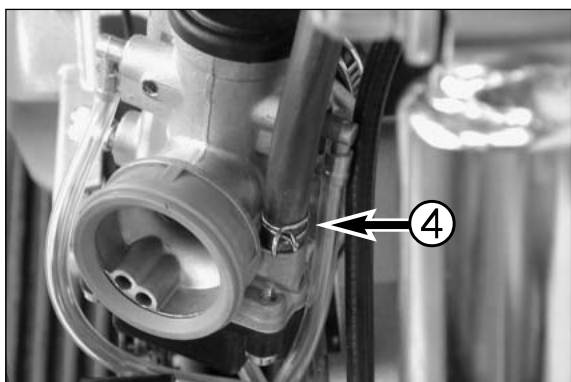


- Place chain on rear sprocket and pinion, mount chain joint ❷ and secure.

NOTE: make sure the locking member runs in the right direction (see photo). The closed side of the safety device must point in the running direction.



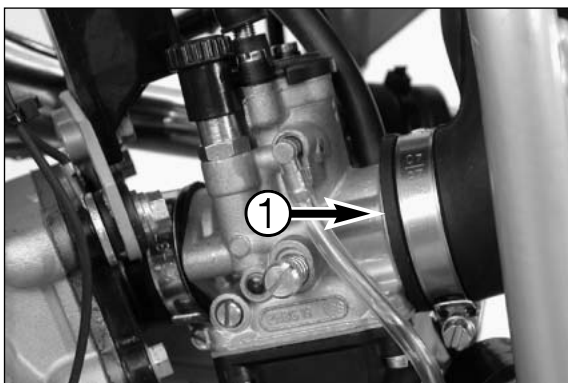
- Mount tank and bolt tight. Do not forget the rubber grommet ❸ for the bolt.



- Connect fuel hose ❹ to the carburetor and secure.



- Slide air filter box into the frame bracket.

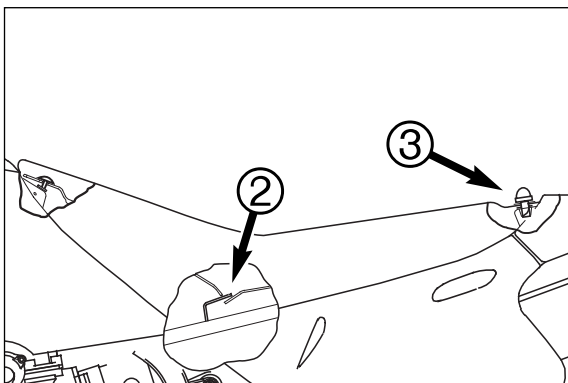


- Attach connection ❶ of the air filter box to the carburetor and tighten hose clamp.



- Insert air filter element in the air filter box and mount cover.

NOTE: the locating tabs in the cover must engage in the panel.



- Mount seat. Make sure the retaining bracket ❷ is inserted properly. Insert quick release ❸ in the dolly and turn 180°.

After installing the engine, perform a short test run and correct the cooling fluid level (LC-engine). Then take the motorcycle on a road test. After the road test, check the engine, the fuel system and the exhaust system for tightness.

DISASSEMBLING THE ENGINE

4

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SPECIAL TOOLS ENGINE 50 AC/LC

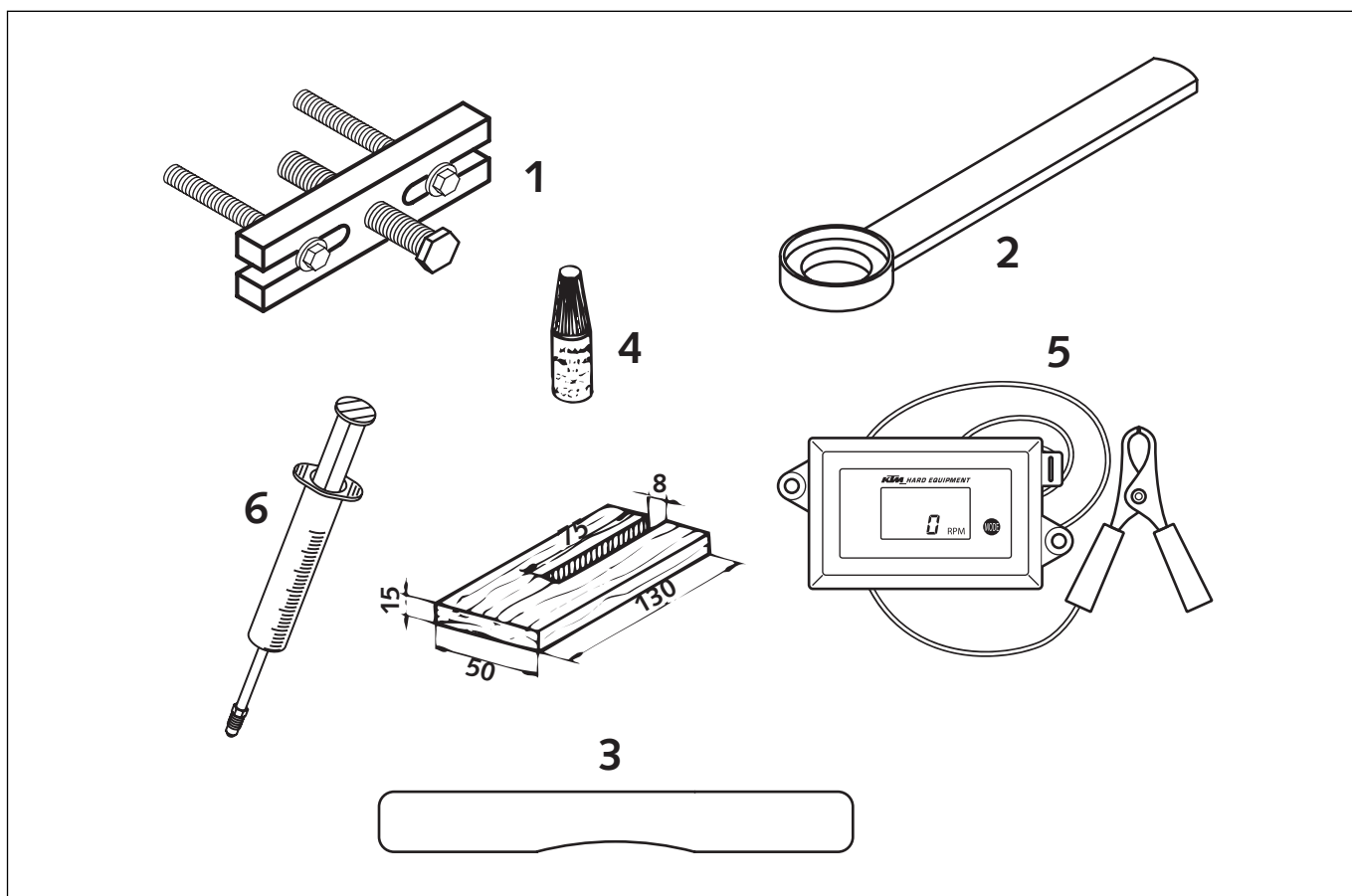
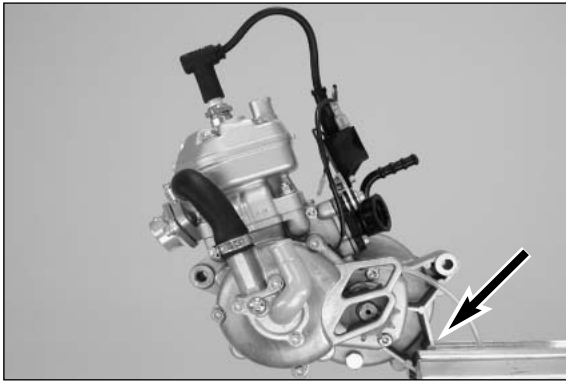
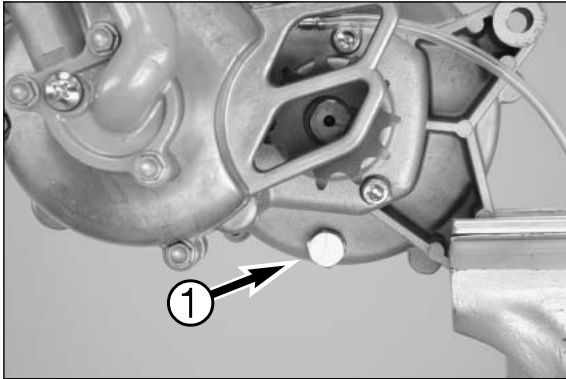


FIG	PARTNUMBER	DESCRIPTION
1	590.29.021.000	Puller for flywheel
2	451.12.021.000	Rotor holding tool
3	451.29.006.000	Adjusting plate for Dimension „X“
4	6 899 785	Loctite 243 blue
5	451.29.075.000	Tachometer
6	503.29.050.000	Bleeding syringe



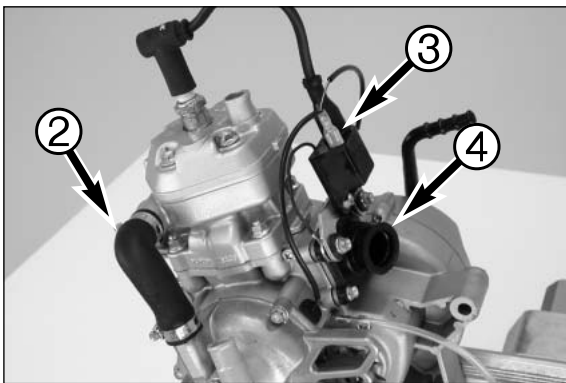
Clamp the engine using a vice

- Clean the engine thoroughly prior to disassembling.
- The engine can be clamped with a vice, using a protective pad to clamp the lower rear bracket (see photo).



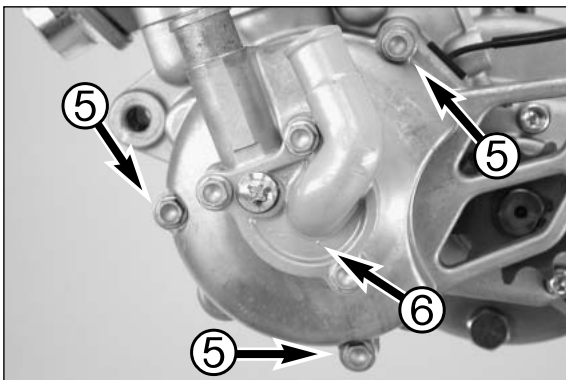
Drain the transmission oil

- Remove the transmission oil drain plug ① including the sealing ring and allow transmission oil to drain.
- Mount the transmission oil drain plug with new sealing ring and tighten to 15 Nm (11 ft.lb).



Remove water hose, intake flange and ignition coil

- Loosen hose clamps and remove water hose ② (only LC-engine).
- Pull plug ③ from the ignition coil, disconnect spark plug cap from the spark plug.
- Loosen 4 bolts on the intake flange ④. Remove the ignition coil with bracket, intake flange and reed valve housing.
- Remove spark plug.

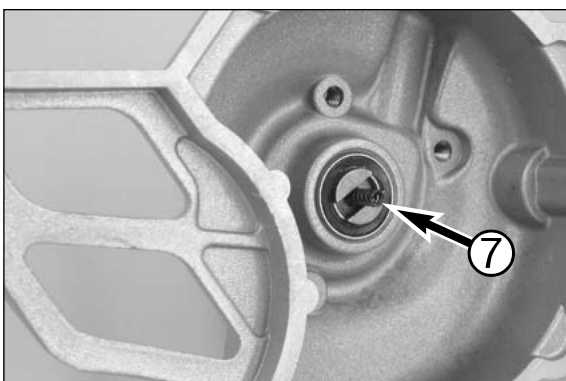


Remove ignition cover and pump.

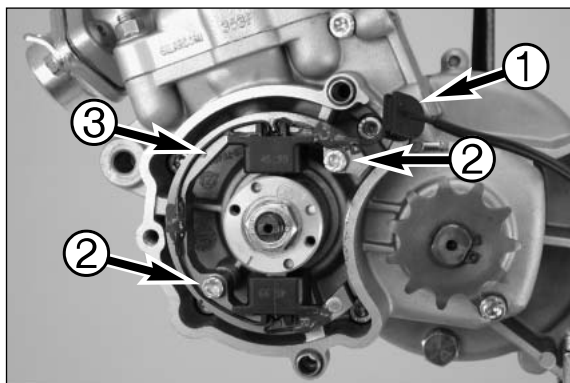
- Loosen bolt ⑤ and remove ignition cover.

NOTE:

- The water pump ⑥ is located on the ignition cover of the LC-engine.
- The ignition cover is centered with 2 dowels. They usually stay in the engine case and should be removed with a suitable wrench.

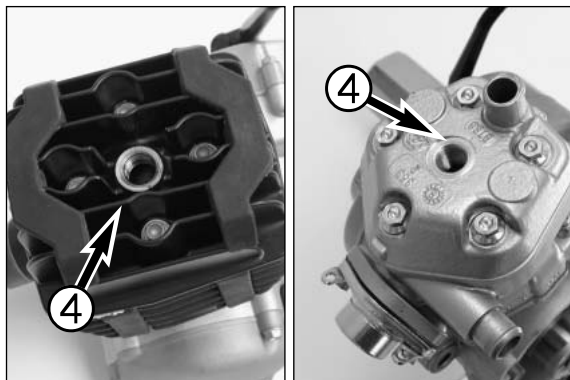


NOTE: water pump shafts from the 2004 model have a hole containing a spring ⑦.



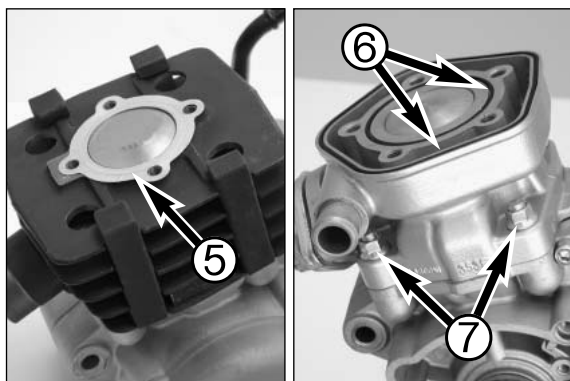
Remove ignition stator.

- Pull cable guide **1** from the case.
- Remove allan bolts **2** of the ignition stator **3**.
- Carefully pull stator **3** out of the case.

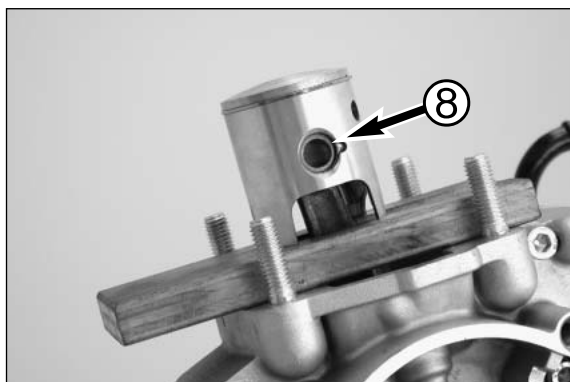


Remove cylinder head, cylinder and pistons.

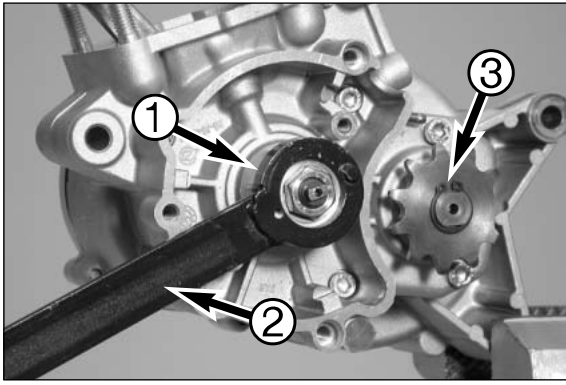
- Loosen bolts on cylinder head crosswise and remove.
- Discard washers (LC-engine), remove cylinder head **4**.



- Remove gasket **5** (AC-engine) or O-rings **6** (LC-engine) from cylinder and discard.
- Loosen 4 bolts **7** on the cylinder base crosswise and remove; carefully lift the cylinder off.



- Place pistons on a self-made mounting board.
- Remove ring lock **8** from the piston pin using a suitable tool.
- Push piston pins out of the piston by hand, remove pistons and pull needle bearing from the conrod.
- Remove cylinder base gasket.



Pull off ignition rotor

- Hold ignition rotor ① with special tool ②, open the nut and remove.

NOTE: a washer is located under the nut; the magnetic attraction of the rotor causes it to adhere to the rotor.

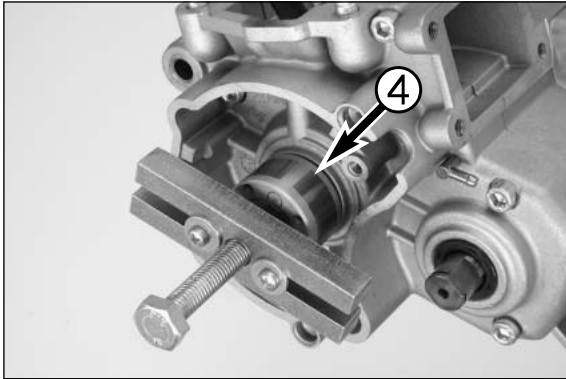
!

CAUTION

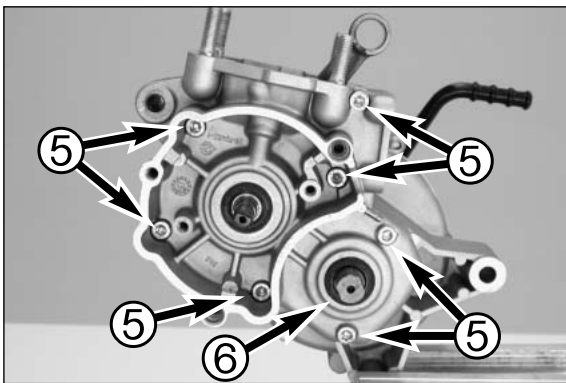
!

MAKE SURE THE TWO PINS OF THE SPECIAL TOOL DO NOT CATCH THE THREADED HOLES, OTHERWISE THE THREADING WILL BE DAMAGED AND THE ROTOR CAN NO LONGER BE REMOVED.

- Remove circlip ③ from the chain sprocket and remove chain sprocket.

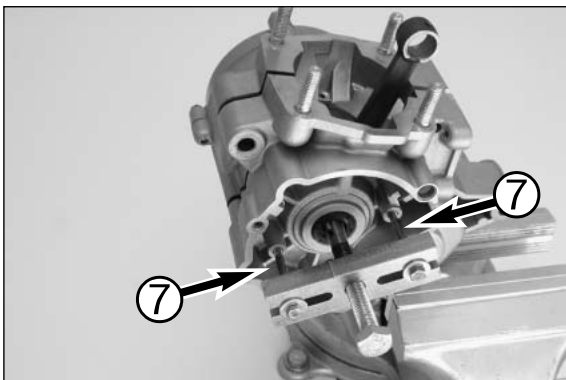


- Bolt extractor to the rotor with 2 M4x35 bolts, hold extractor in place and pull rotor ④ off by bolting in the extractor bolt.
- Remove woodruff key from the groove.



Split the casing halves

- Loosen all 7 allen bolts ⑤ holding the two casing halves together and set aside.



- Bolt extractor to the casing with 2 M5x50 bolts ⑦.
- Hold extractor in place and separate the casing by bolting in the extractor bolt, gently tapping the casing with a plastic hammer to prevent the bearing on the drive shaft ⑥ from canting.

!

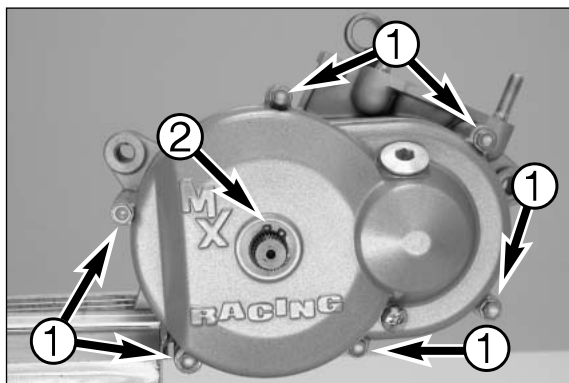
CAUTION

!

IF THE BEARING ON THE DRIVE SHAFT CANTS, STOP PULLING OFF THE CASING. USE THE PLASTIC HAMMER TO CAREFULLY CORRECT THE DISTORTION, OTHERWISE THE CASING WILL BE DAMAGED.

- Remove casing; remove seal and discard.

NOTE: the housing halves are centered with 2 dowels which should also be removed.



Disassemble the clutch and primary drive

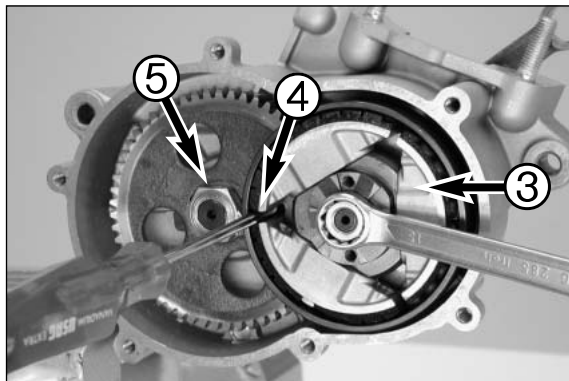
- Recheck the engine to provide access to the clutch side.
- Remove kickstarter and bolts ① on the clutch cover.
- Remove clutch cover, discarding the seal.



WARNING



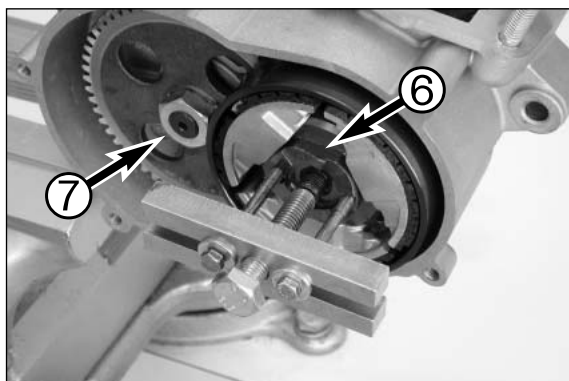
DO NOT REMOVE THE CIRCLIP ②, OTHERWISE THE KICKSTARTER SPINDLE MAY FALL FROM THE CASING AND THE KICKSTARTER SPRING CAUSE INJURIES.



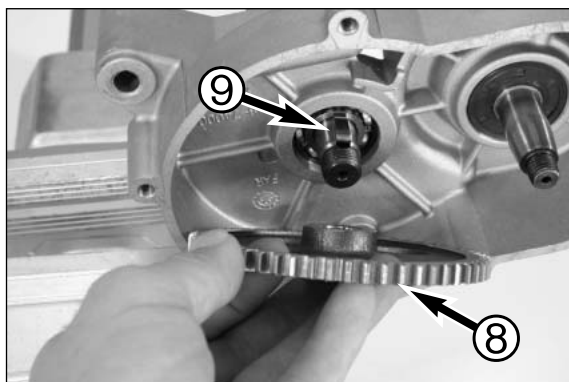
- Block the centrifugal clutch ③ with a suitable mandrel ④.

NOTE: the drum and the gear wheel of the primary drive have holes. Push the mandrel through both holes.

- Bend up the lock washer 5 on the output shaft nut.
- Loosen the nut on the clutch and the output shaft and pull the mandrel out.



- Remove nut and washer from the crankshaft.
- Bolt the extractor to the hub of centrifugal clutch ⑥ using bolts M5x50, hold the extractor in place and pull the centrifugal clutch from the crankshaft by bolting in the extractor bolt.
- Remove the centrifugal clutch from the crankshaft together with the bearing and spacing washers.
- Remove nut ⑦ and lock washer from the output shaft.



- Remove gear ⑧ on the primary drive from the shaft, remove woodruff key ⑨ from the shaft groove.
- Press the crankshaft and output shaft out of the casing using a press or suitable extractor.



CAUTION



THE TWO SHAFTS MAY NOT BE STRUCK OUT OF THE CASING WITH A HAMMER SINCE THE CRANKSHAFT OR THE CASING MAY BE DAMAGED.

SERVICING INDIVIDUAL COMPONENTS

5

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RIGHT HOUSING HALF	5-2
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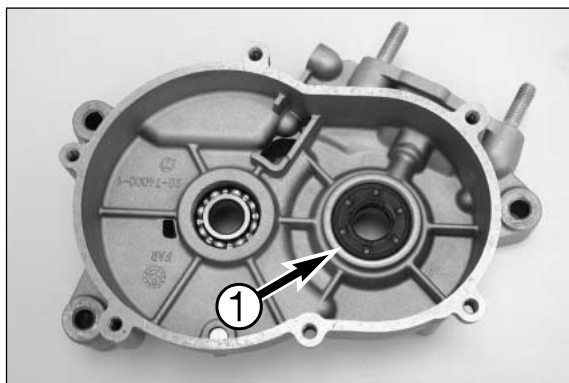
Engine housing

Note: Read through the following section before commencing work. Then determine the assembly sequence so that the engine housing halves only need to be heated up once before replacing the bearings.

Having first removed the dowels, in order to expel the bearings or remove them with light mallet blows, the housing halves must be placed on a suitably large plane surface, supporting the whole of the sealing surface without damaging it. A wooden panel is best used as a base.

Bearings or shaft seal rings should not be hammered into their seats. If no suitable press is available, use a suitable mandrel and hammer them in with great care. Cold bearings will practically drop into their seats at an engine housing temperature of approx. 150° C.

After cooling, should the bearings fail to lock in the bore, they are bound to rotate after warming. In that event the housing must be replaced.



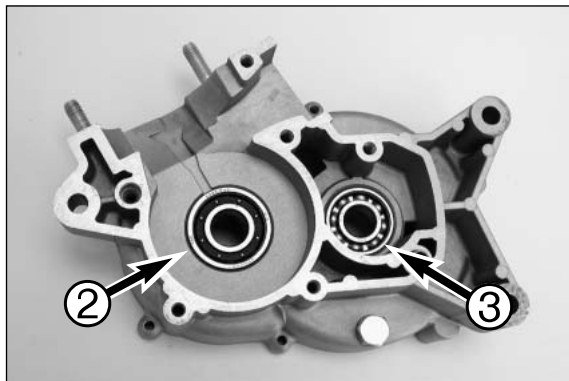
Working on the right half of the engine case

Remove shaft sealing ring ❶ and heat the engine case half on a heating plate to approx. 150° C.

NOTE: if the engine case is heated to 150° C and struck on a wooden surface, the bearings usually fall out of the bearing seats automatically. If necessary, the bearings must be pushed out.

! CAUTION !

- ALWAYS REMOVE DOWELS FIRST TO PREVENT THE CASE FROM BEING DAMAGED.
- THE DEVICES (MANDRELS) TO PRESS THE NEW BEARINGS IN PLACE SHOULD BE DESIGNED SUCH THAT THEY ONLY REST ON THE OUTER RING OF THE BEARING, OTHERWISE THE BEARINGS WILL BE DAMAGED WHEN FITTED.



Grooved ball bearing for crankshaft ❷

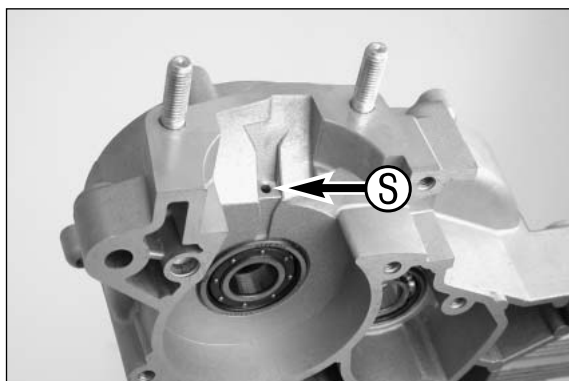
Use a suitable mandrel to press the grooved ball bearing into place. Press the new grooved ball bearing all the way in.

NOTE: the grooved ball bearing of the crankshaft will protrude approx. 1 mm from the surface of the case.

Grooved ball bearing for output shaft ❸

Use a suitable mandrel to press the grooved ball bearing into place. Press the new grooved ball bearing all the way in.

NOTE: the grooved ball bearing of the output shaft should fit flush with the surface of the case.



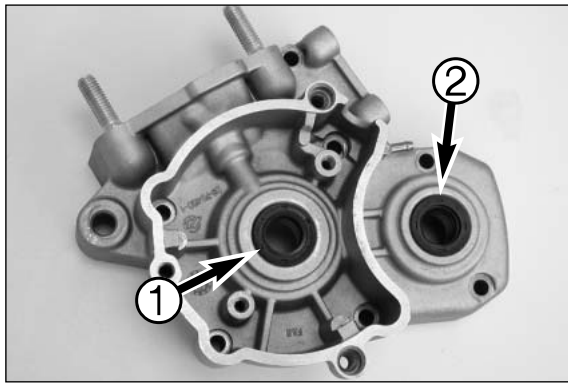
Shaft sealing ring for crankshaft ❶

Press a new shaft sealing ring into place with the sealing lip to the inner side.

NOTE: the seal shaft ring will fit approx. 1 mm lower than the surface of the case.

After the engine case halves have cooled, check all bearings for firm retention in the bearing seats.

Finally, check the greasing hole ❸ for the grooved ball bearing of the crankshaft and the connection for the gearbox ventilation for clearance.



Working on the left half of the engine case

Remove shaft sealing rings ①/② and heat engine case halves on a heating plate to approx. 150° C.

NOTE:

- If the engine case is heated to 150° C and struck on a wooden surface, the bearings usually fall out of the bearing seats automatically. If necessary, the bearings must be pushed out.
- The devices (mandrels) to press the new bearings in place should be designed such that they only rest on the outer ring of the bearing, otherwise the bearings will be damaged when fitted.

Grooved ball bearing for crankshaft ③

Use a suitable mandrel to press the grooved ball bearing into place. Press the new grooved ball bearing all the way in.

NOTE: the grooved ball bearing of the crankshaft will protrude approx. 1 mm from the surface of the case.

Grooved ball bearing for output shaft ④

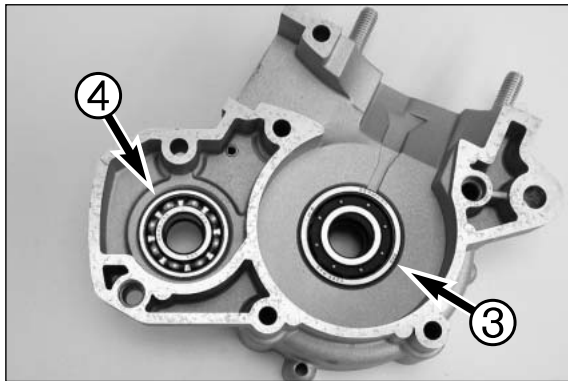
Use a suitable mandrel to press the grooved ball bearing into place. Press the new grooved ball bearing all the way in.

NOTE: the grooved ball bearing of the output shaft should fit flush with the surface of the case.

Shaft sealing ring for crankshaft ①

Press a new shaft sealing ring into place with the sealing lip to the inner side.

After the engine case halves have cooled, check bearings for firm retention.

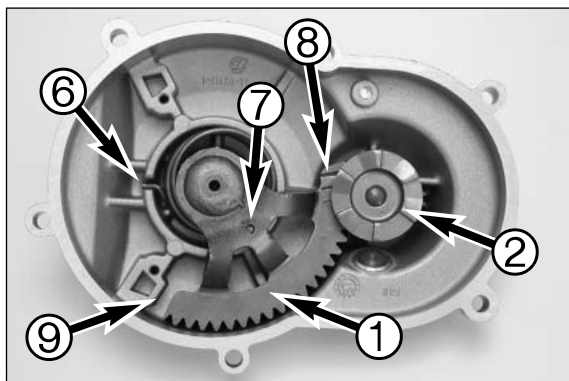


Measure the crankshaft

If continuing to use the crankshaft, check crankshaft journal for lateral runout.

The lateral runout of the crankshaft journal should be no more than 0.05 mm

NOTE: Conrod bearing and crankshaft can only be checked in dismantled condition, this should be done in a special workshop.



Working on the clutch cover

NOTE: dismantling the clutch cover is necessary if parts are damaged or the O-ring is leaking.

- Turn kickstarter shaft ❶ counter-clockwise and remove ratchet gear ❷. Check gearing for wear.

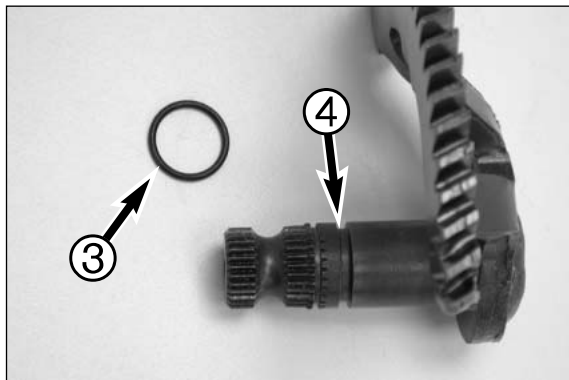
NOTE: If the kickstarter shaft is to be removed, the outer circlip must be removed, carefully pulling the kickstarter shaft out of the cover.



WARNING



THE KICKSTARTER SPRING IS PRETENSIONED. IT MUST BE STRESS-RELIEVED WHEN THE KICKSTARTER SHAFT IS PULLED OUT.



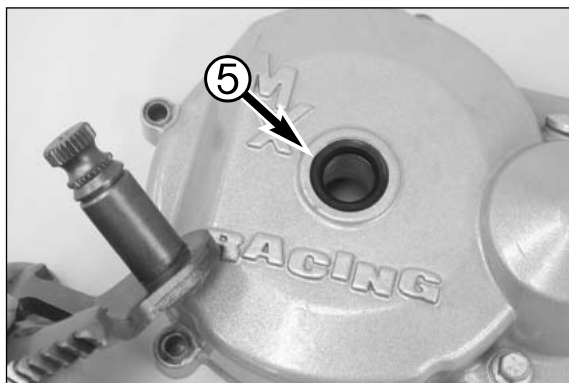
- Clean kickstarter shaft and renew O-ring ❸ (up to the 2003 model).

NOTE:

- make shure that the O-ring is mounted in the second groove ❹.
- starting with the 2004 model, a shaft seal ring ❺ is installed in the engine instead of an O-ring and the kickstarter shaft no longer has a second groove. Pry out the old shaft seal ring and press the new shaft seal ring in until flush with a suitable tool.

During assembly only push the kickstarter shaft into the clutch cover far enough to be able to reinsert the spring (❻ and ❼). The spring is pretensioned by turning the kickstarter shaft in a counter-clockwise direction, then completely push the kickstarter shaft into the clutch cover. Hold the kickstarter shaft turned, mount the ratchet gear and release the kickstarter shaft again.

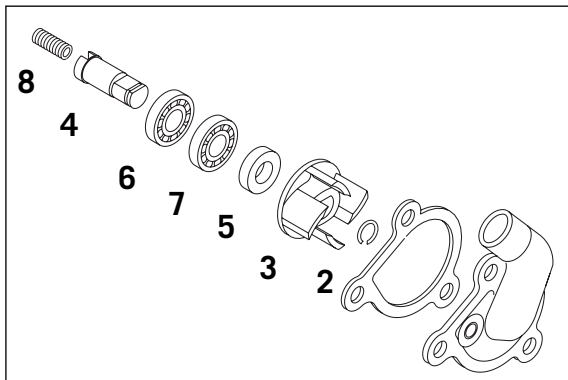
NOTE: the end of the kickstarter shaft gearing has a deformation ❸ to prevent the kickstarter shaft from hitting against the clutch cover, causing it to wedge with the gearing of the ratchet gear. Make sure to keep a gap between the kickstarter shaft and stop ❹.





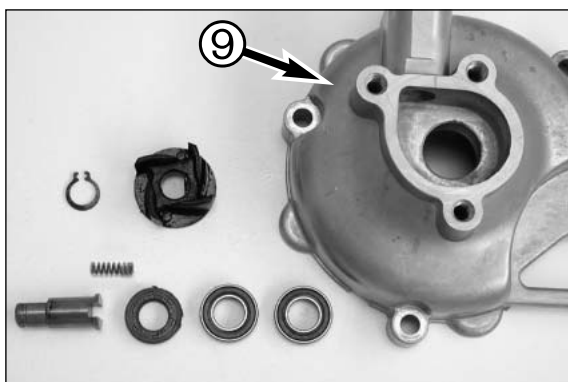
Overhaul the water pump (LC-engine)

- Remove cover ①, discard the O-rings.

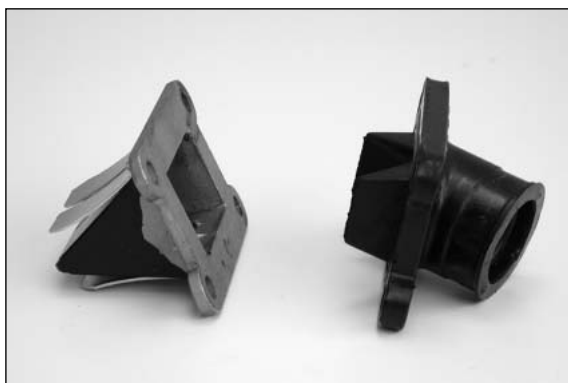


- Remove circlip ② with a suitable wrench.
- Remove the water pump wheel ③ from the pump shaft ④.
- Press out shaft ④, press out both bearings (⑥ and ⑦).
- Remove seal shaft ring ⑤.

NOTE: a spring ⑧ is installed starting with the 2004 model. Remove before disassembling.



- Press in a new seal shaft ring ⑤, make shure that the open side of the seal shaft ring is located on the side of the water pump wheel.
- Slide both new bearings (⑥ and ⑦) onto the pump shaft ④.
- Lightly grease pump shaft and press the pump shaft with the bearings in all the way into the ignition cover ⑨, check for smooth operation.
- Mount the water pump wheel and the circlip.
- Mount cover 1 with a new O-ring.
- Mount the spring ⑧ (applies to models from 2004), fix in the hole with a small amount of grease, if necessary.



Reed valve housing, intake flange

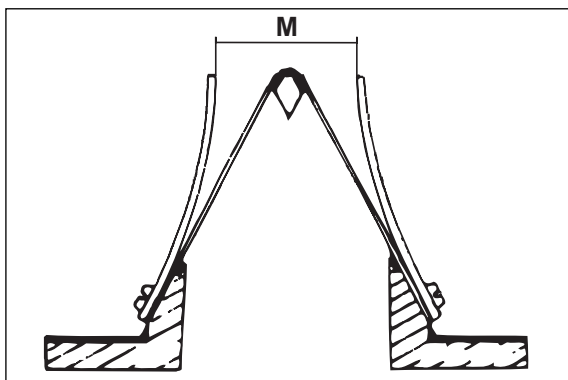
NOTE: the reed paddles gradually lose their tension, leading to power loss. Defective or worn reed paddles must be replaced.

If the sealing surfaces of the reed valve housing are also damaged, replace the entire reed valve housing.

! CAUTION !

SECURE ALL BOLTS OF THE DIAPHRAGM HOUSING WITH LOCTITE 243 AFTER ASSEMBLY.

Intake flange
Check for cracks and other damage.



Reed valve housing
Measure the distance ① between the stop plates with a sliding gauge. If the measured value deviates from the desired value, the stop plates must be bent accordingly.

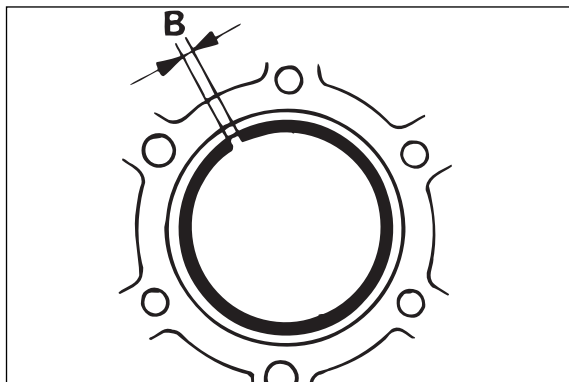
Distance ① = 17 mm



Check pistons

If continuing to use a used piston, check as follows:

1. Check piston bearing surface for pressure marks, piston seizure (light friction can be removed with a fine emery stone).
2. The piston ring may not jam in the piston ring groove. To clean the piston ring groove, use an old piston ring or sanding paper (400 grain size).
3. Piston ring anti-rotation device must fit tightly in the piston and may not be worn.
4. Check piston ring for wear and gaps in the cylinder.

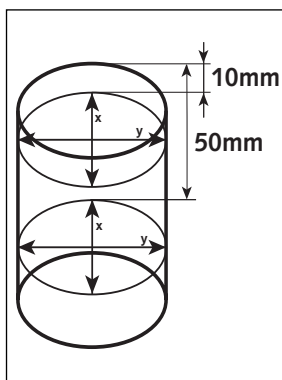


Measuring the piston ring end gap

- Insert the piston ring in the cylinder and align with the piston (approx. 10 mm / 0.39 in under the upper edge of the cylinder).
- Measure end gap **B** with a feeler gauge.

End gap: max. 0.20 mm / 0.0078 in

NOTE: If the end gap is larger than specified above, pistons and cylinder must be checked for wear. If the piston wear and cylinder wear are within the tolerance zone, the piston ring must be replaced.



Measure the piston and cylinder, determine the piston

- To determine cylinder wear, measure the cylinder 10 mm and 50 mm from the top using a micrometer (shown in the drawing).
- Measure the cylinder diameter in the X and the Y axis to establish any ovality.
- The piston is measured at the piston skirt, transverse to the piston pin 32 mm below the top, as shown in the illustration.
- The smallest cylinder diameter minus the largest piston diameter determines the piston fitting clearance.

Piston fitting clearance	AC-engine:	0.055 - 0.065 mm (0.00216 - 0.00256 in)
	LC-engine:	0.045 - 0.055 mm (0.00177 - 0.00216 in)

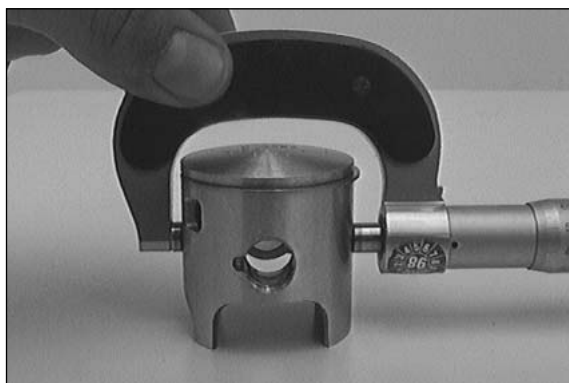
MARK	PISTON	CYLINDER AC	CYLINDER LC
A	39.455 - 39.460 mm	39.515 - 39.520 mm	39.505 - 39.510 mm
	1.5533 - 1.5535 in	1.5557 - 1.5559 in	1.5553 - 1.5555 in
B	39.461 - 39.465 mm	39.521 - 39.525 mm	39.511 - 39.515 mm
	1.5535 - 1.5537 in	1.5559 - 1.5561 in	1.5555 - 1.5557 in
C	39.466 - 39.470 mm	39.526 - 39.530 mm	39.516 - 39.520 mm
	1.5537 - 1.5539 in	1.5561 - 1.5563 in	1.5557 - 1.5559 in
D	39.471 - 39.475 mm	39.531 - 39.535 mm	39.521 - 39.525 mm
	1.5539 - 1.5541 in	1.5563 - 1.5565 in	1.5559 - 1.5561 in

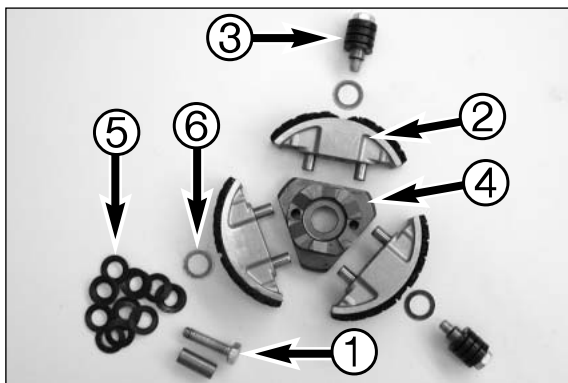
NOTE:

When replacing piston and cylinder always make sure to use a piston and cylinder of the same type. The type identification mark (A to D) can be found on the cylinder base or the piston head, respectively.

The table to the right indicates the tolerance thresholds for the listed components.

Always keep in mind that a minimum piston fitting clearance of 0.055 mm (0.00216 in) (AC-engine) or 0.045 mm (0.00117 in) (LC-engine) is required.





Overhauling the centrifugal clutch

- Loosen HH bolts ① on the clutch shoes ② and remove together with the set of springs ③ from the clutch hub ④.

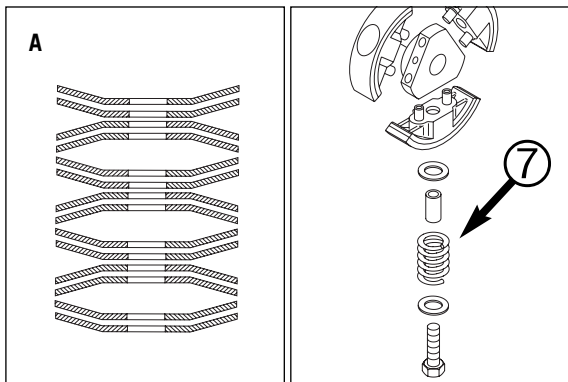
NOTE: coilsprings ⑦ are used instead of the spring washers for the AC-engine (accept US models 2008).

Length of clutch springs: min. 19.6 mm (0.748 in).

- Remove HH bolts with sleeves and set of springs from the clutch shoes.

NOTE:

- the set of springs consists of 14 spring washers ⑤, make sure the spring washers are placed exactly in the same order A shown below (only LC-engine).
- Washers ⑥ to pretension the spring sets are located between the spring sets and the clutch shoes. The preload on the spring set has an influence on the clutch engagement speed. 0.5 mm more preload increases the clutch speed by approx. 500 rpm.
- the clutch speed is the speed at which the clutch begins to engage and the motorcycle begins to move.
- check the clutch speed with the tachometer 451.29.075.000 and adjust if necessary:
AC-engine: 4000 - 4500 rpm
LC-engine: 8500 - 9000 rpm



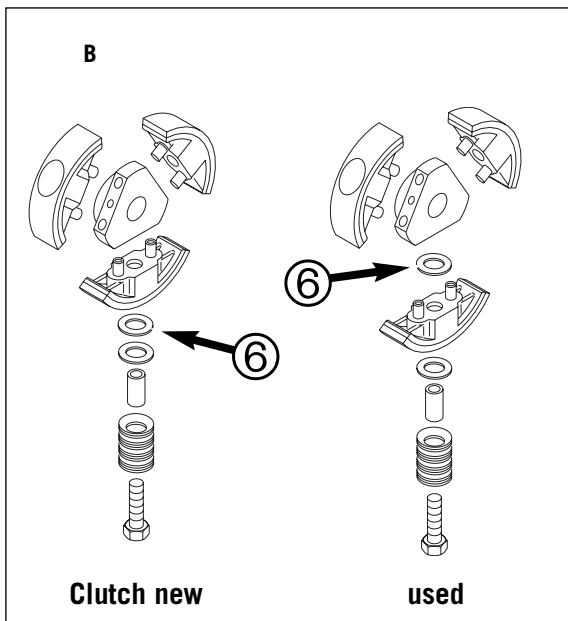
Balancing the clutch wear

- Check clutch shoes for wear; if the lining only shows minor signs of wear, the linings can be reinstalled.

NOTE:

- the centrifugal clutch has an outer diameter of approx. 82.5 mm (3.248 in) when new.
- to compensate for minor wear in the lining, one of the preload washers ⑥ from any set of springs can be inserted between the clutch hub and clutch shoes - see Fig. ⑥. If only one washer is installed, this washer can be used.
- the inner diameter of the clutch drum must not exceed 84.4 mm (3.3228 in) (new condition 84.0 mm [3.3071 in]).
- Make sure the spring sets are kept free of contamination during maintenance and repair work to the clutch, otherwise they may malfunction.

Assembly is in the reverse order as disassembly. HH bolts ① must be secured with Loctite 243 and tightened to 12 Nm (9 ft.lb).

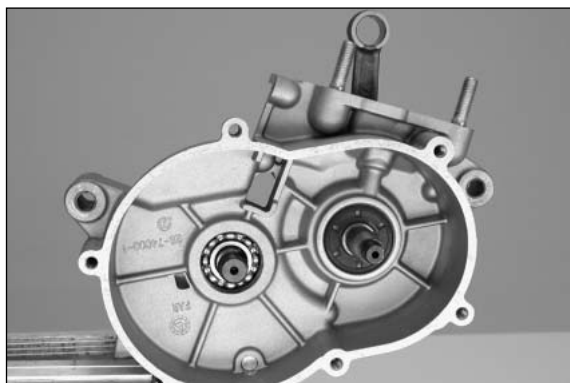


ASSEMBLING THE ENGINE

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Mounting the crankshaft and output shaft

- Heat the engine case on a heating plate.
- Lubricate both bearings, lightly grease the seal shaft ring.
- Push the output shaft and crankshaft into the bearing.

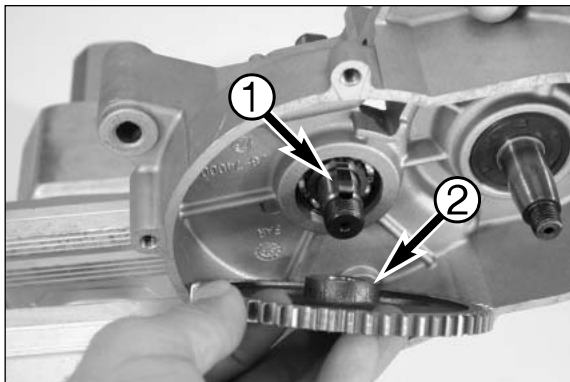
NOTE: the conrod must be in a vertical position.

!

CAUTION

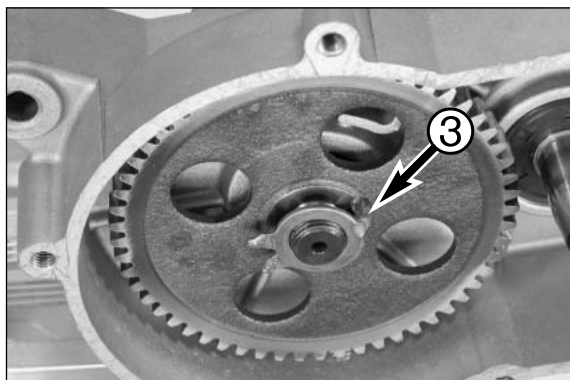
!

Do NOT INSERT THE SHAFTS INTO THE BEARINGS WITH A HAMMER SINCE THE BEARINGS AND CRANKSHAFT MAY BE DAMAGED.



Mounting primary drive

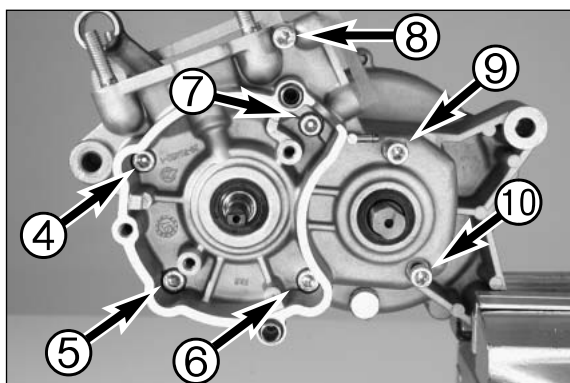
- Insert woodruff key ❶ in the output shaft groove.
- Place the gear of the primary drive on the output shaft, collar ❷ first.



- Slide on the nut lock washer.

NOTE: the tab of the lock washer ❸ must engage in the bore of the primary drive wheel.

- Bolt nut M14x1,25 into place.



Mounting the left half of the case

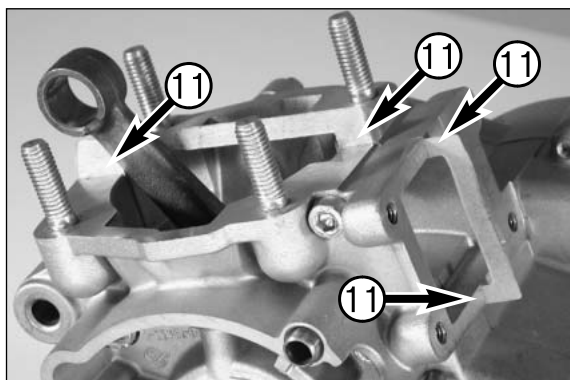
- Mount 2 dowels 7x9x10, apply new seal.

NOTE: the seal is not cut until after the second half of the case is mounted.

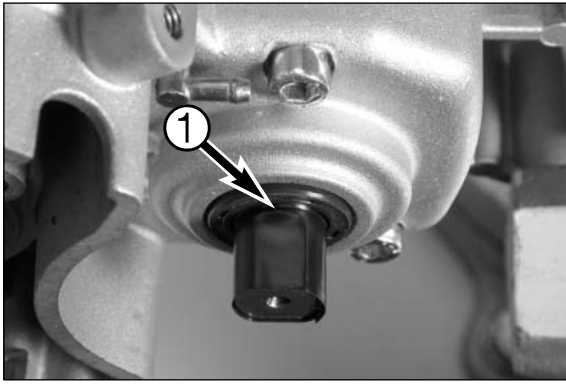
- Heat the left half of the case on a heating plate and mount.
- Bolt 7 allen bolts into place.

NOTE: ❹, ❸ and ❿ are M6x40; ❺, ❻, ❼ and ⓫ are M6x35 bolts.

- Tighten ❹ to ❼ crosswise to 10 Nm (7 ft.lb).
- Tighten ❸ to ❿ to 10 Nm (7 ft.lb).
- Gently tap the case with a plastic hammer a few times near the bearings to relieve the pretensioning.
- Check both shafts for smooth operation by turning.



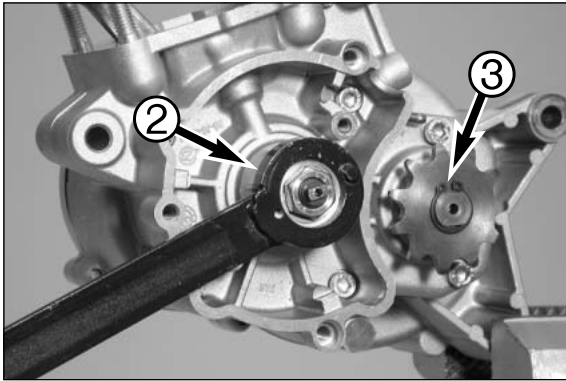
- Cut protruding seal ❾ with a sharp knife for a flush fit.



- Wrap insulating tape around the output shaft in the area of the sharp edge ① to prevent the seal shaft ring from being damaged.

NOTE: wrap insulating tape just above edge to allow the tape to be easily pulled off after the seal shaft ring is mounted.

- Grease the seal lip and press in the seal shaft ring.
- Pull off the tape.



Mounting the ignition

- Place woodruff key in the crankshaft groove.
- Mount ignition rotor ② with a washer, holding back with special tool, secure nut with Loctite 243 and tighten to 20 Nm (15 ft.lb).

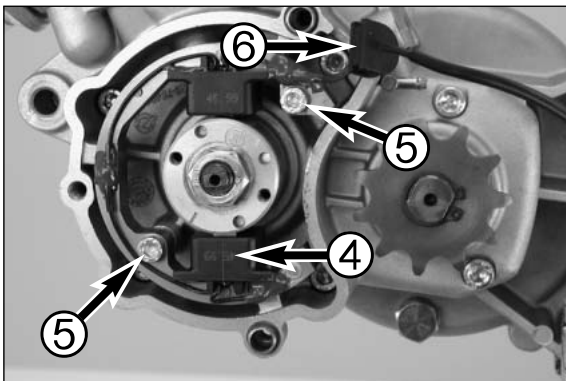
!

CAUTION

!

THE PINS ON THE SPECIAL TOOL MAY NOT ENGAGE IN THE ROTOR'S THREADED HOLES, OTHERWISE THE THREAD WILL BE DAMAGED.

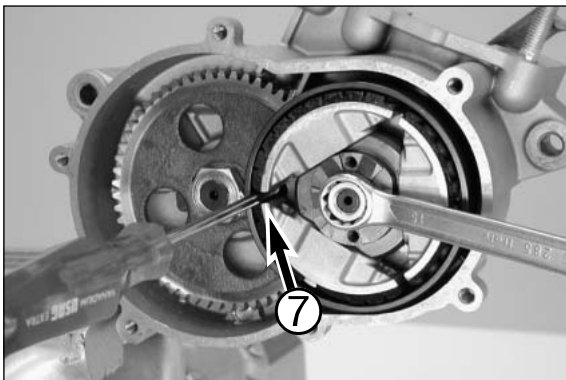
- Slide the chain sprocket ③ on the output shaft with the collar towards housing and mount the circlip.



- Mount ignition stator ④ in the case.

NOTE: for easier installation, gently press the stator together with your fingers. Check for a correct fit prior to bolting tight, stator may not cant.

- Secure allan bolts M5x25 ⑤ on the stators with Loctite 243 and tighten to 8 Nm (6 ft.lb).
- Position cable guide ⑥.



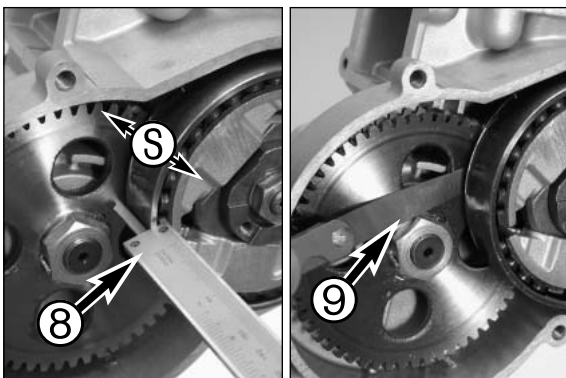
Mount the clutch

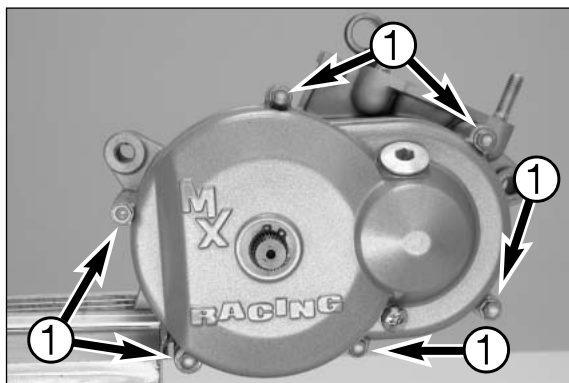
- Slide spacing washer(s) (25x15) onto the crankshaft, mount needle bearings and the centrifugal clutch unit.
- Block the centrifugal clutch, drum and gear of the primary drive with a suitable mandrel ⑦.
- Secure the nut M10x1.25 on the crankshaft with Loctite 243 and tighten to 35 Nm (25 ft.lb).
- Tighten the output shaft nut to 40 Nm (30 ft.lb).
- Bend over the lock washer on the output shaft nut.

NOTE: for a correct function of the centrifugal clutch axial clearance ⑧ between 0,2 and 0,7 mm (0,039 and 0,0055 in) must remain between the bottom of the drum and the clutch unit.

- Checking the axial clearance with a sliding gauge ⑧ by pressing the drum against the spacer and measure the distance from the upper edge of the drum to the drive wheel. Then pull the drum against the clutch unit, hold in position and measure again - the difference between these measurements is the axial clearance.
- Press drum against the spacing washers by hand and measure the distance between the drum and the gear of the primary drive using a feeler gauge ⑨ - it should be at least 0.5 mm.

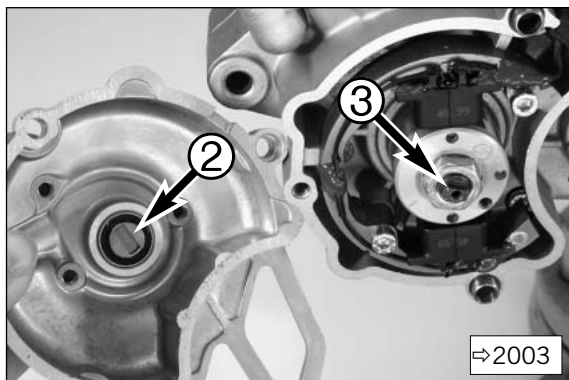
NOTE: if the clearances are outside of the tolerance zone, use spacing washers to balance. Spacing washers are available in different thicknesses.





Mounting the clutch cover

- Put new seals in place and mount the clutch cover .
- Bolt clutch cover into place with 6 bolts M6x25 ❶, tighten the bolts to 10 Nm (7 ft.lb).



Mount the ignition cover and water pump.

- Put the dowels 7x9x10 in place.
- Align the driving slot on the water pump drive ❷ with the driver blade ❸ on the crankshaft (LC-engine).

NOTE: make sure the spring is mounted in the water pump shaft (models from 2004).

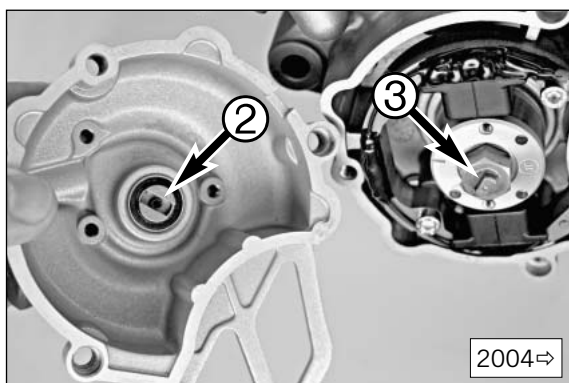
- Put cover on and engage by turning the pump drive cover back and forth.

!

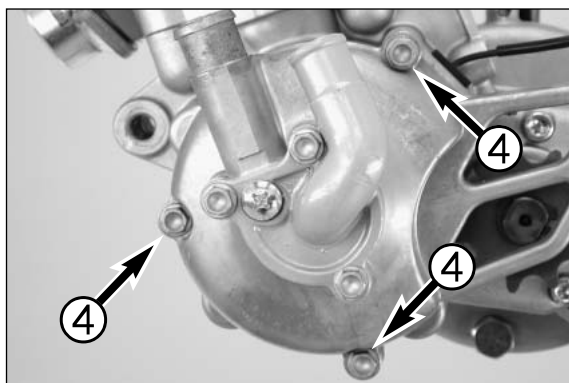
CAUTION

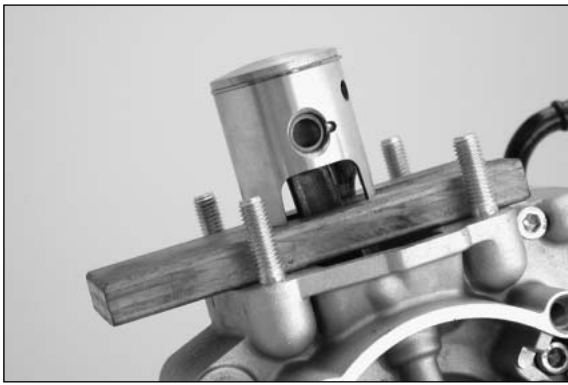
!

Do NOT try to mount the ignition cover by force, otherwise components will be damaged.



- Bolt 3 HH bolts M6x25 ❹ into ignition cover and tighten to 10 Nm (7 ft.lb).





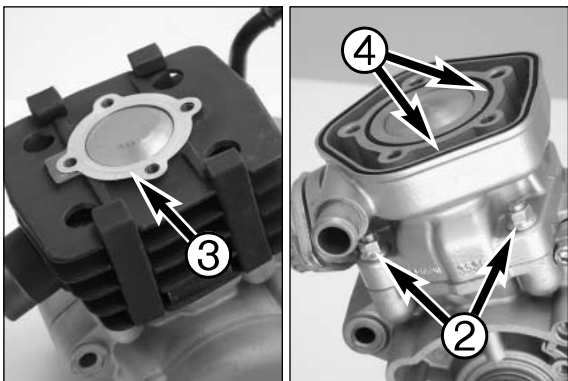
Mount the pistons

- Fix conrod with a mounting board.
- Grease the conrod bearings and attach to conrod eye.
- Mount pistons, the arrow on the bottom of the piston should point towards the outlet port.
- Slide piston pin into the conrod eye by hand and mount piston pin lock with the open side facing down.

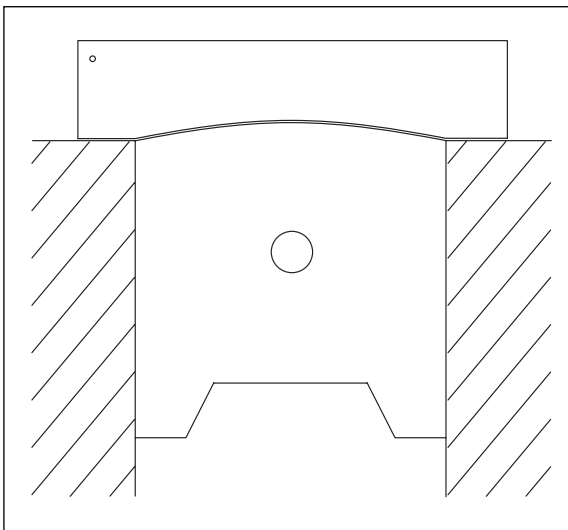


- Turn the piston ring until the anti-rotation device engages in the piston ring end gap ①.
- Mount cylinder base gasket, press piston rings together with your fingers and slide the greased cylinder over the pistons.

NOTE: if neither the pistons, cylinder, crankshaft or engine case are being replaced, the same seal thickness can be used as before.



- Tighten collar nut ② on the cylinder base bolting crosswise to a torque of 18 Nm (13 ft.lb).
- Mount a new seal ③ (AC-engine) or insert new O-rings ④ in the recesses (LC-engine).



Adjust measurement „X“

NOTE:

- Measurement „X“ is the distance from the upper piston edge to the upper cylinder edge, piston set in TDC position and cylinder base bolts tightened.
- Measurement „X“ must be set with special care, adjusting various thicknesses of cylinder base gaskets.

!

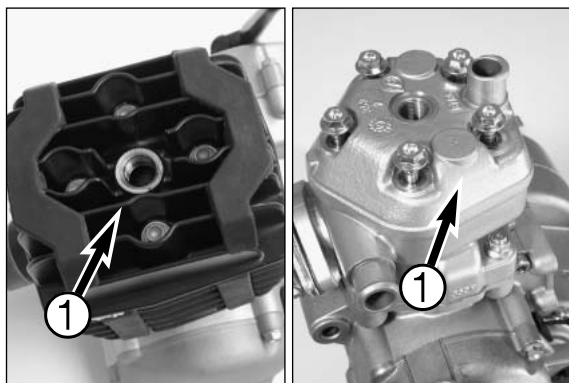
CAUTION

!

IF THE „X“ MEASUREMENT IS TOO LARGE-THIS MEANS THAT A GAP IS VISIBLE BETWEEN PISTON AND ADJUSTING PLATE-THE COMPRESSION WILL SINK AND THE ENGINE WILL LOSE POWER. IF THE „X“ MEASUREMENT IS TOO SMALL-THIS MEANS THAT A GAP IS VISIBLE BETWEEN CYLINDER AND ADJUSTING PLATE-THE ENGINE WILL PING AND OVERHEAT.

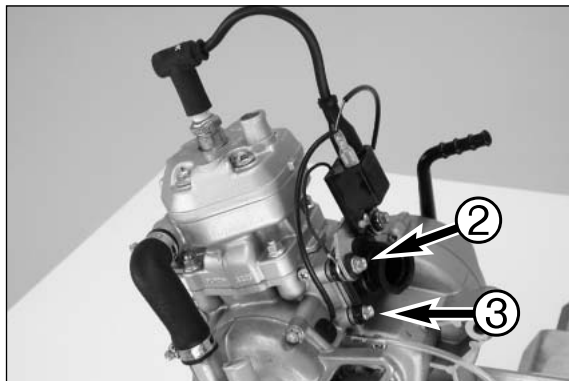
- Place the adjusting plate on the cylinder and set pistons to TDC (see diagram). If the „X“ measurement is correctly adjusted, the feeler gauge will lie flush on the pistons and on the cylinder.
- Adjust the „X“ measurement by adding or removing cylinder base gaskets.

NOTE: the „X“ measurement is increased by adding cylinder base gaskets and decreased by removing cylinder base gaskets.



Mount the cylinder head

- Mount the cylinder head ❶, making sure the water connection is on the intake side (LC-engine).
- Use new washers for the cylinder head bolts (LC-engine), tighten cylinder head bolts crosswise in 2 stages to 15 Nm (11 ft.lb).

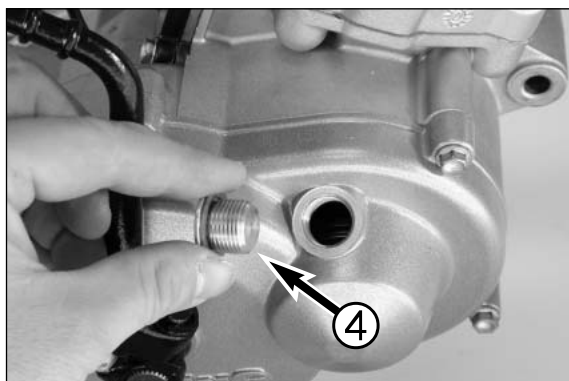


Mount water hose, intake flange and ignition coil

- Apply water hose and tighten hose clamp (only LC-engine).
- Mount the reed valve housing and intake flange with new seal.

NOTE:

- the longer bolts (M6x40) ❷ are bolted into the upper holes, the bracket and the ground connection of the ignition coil are also fixed with these bolts.
- the shorter bolts (M6x20) ❸ are bolted into the lower holes.
- the intake flange should point to the chain sprocket.
- Bolt in the spark plug, spark plug cap and ignition connection, mount kickstarter and transmission vent hose.



Fill in transmission oil

- Make sure the transmission drain plug is tightened to 15 Nm (11 ft.lb).
- Remove oil filler bolt ❹ and add 150-200 ccm gear oil Dexron II (Motorex ATF Super), remount oil filler bolt and tighten to 5 Nm (4 ft.lb).

TROUBLE SHOOTING

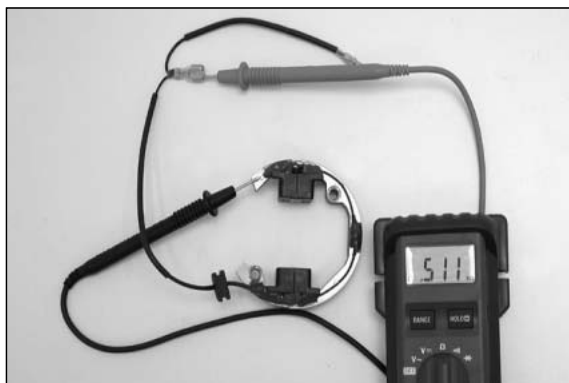
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TROUBLE	CAUSE	REMEDY
Engine fails to start	Operating error	Open fuel tap, replenish fuel, do not use choke
	Fuel supply interrupted	Close fuel tap, loosen fuel hose at carburettor, lead into a basin and open fuel tap, – if fuel leaks out, clean carburettor – if no fuel leaks out, check tank ventilation, i.e. clean fuel tap
	Electrode distance too large	Reduce electrode distance (0.60 mm) (0.0236 in)
	Plug fouled by oil, wet or bridged	Clean spark plug or renew
	Ignition wire or spark plug connector damaged	Dismount spark plug, connect ignition cable, hold to ground (blank place on engine) and actuate kickstarter, a strong spark must be produced at the spark plug – If no spark is produced, loosen spark plug cap from ignition cable, hold about 5 mm from ground and actuate kickstarter – If a spark now occurs, replace spark plug cap – If no spark is produced, control ignition system
	Kill button wire or short-circuit switch faulty	Disconnect black coloured cable from short circuit button at ignition coil and check ignition spark. If the spark is O.K. repair defective part of cable or ignition switch
	Loose ignition cable connectors	Inspect cable connectors
	Spark too weak	Examine ignition system
	Water in the carburetor and jets blocked	Dismantle and clean carburetor
Engine without idle running	Idle adjusting bolt out of adjustment	Readjust idle running or replace idle adjusting bolt
	Ignition system damaged	Examine ignition system
	Wear	Overhaul engine
Less power of engine	Air filter obstructed	Clean or renew airfilter
	Fuel supply partly interrupted or blocked	Blow through fuel pipe and clean carburetor
	Loss of compression due to loose spark plug	Tighten spark plug
	Exhaust system damaged	Check exhaust system for damage
	Engine has not enough preignition	Check and adjust ignition
	Reed paddles tensionless or damaged, surface of reed valve housing damaged	Replace reed paddles or reed valve housing
	Wear	Overhaul engine

TROUBLE	CAUSE	REMEDY
Engine stalling or running with four stroke cycle	Carburetor overflows if level adjust too high, float needle seating is dirty or enlarged	Clean carburetor, if necessary replace float needle and adjust level
	Loose carburetor jets	Tighten jets
High rpm misfiring	Incorrect heat range spark plug or low quality spark plug	Refer to technical data section
	Loose, corroded or non conductive ignition socket connector	Check and seal with silicon
Engine splutters into the carburetor	Lack of fuel	Clean fuel pipes, examine tank aeration and clean
	Spark plug with incorrect heat value (Ignition by incandescence)	Fit correct spark plug
	Engine takes air out of control	Check intake flange and carburettor if firmly setted
Engine overheating	Insufficient liquid in cooling system (only LC-engine)	Top up coolant and bleed cooling system check cooling system for leaks
	Radiator fins clogged (only LC-engine)	Clean radiator fins with water jet
	Frothing in cooling system (only LC-engine)	Renew coolant using branded anti-freeze/anti-corrosive (Motorex Anti-Freeze)
	Pinched or kinked water hoses (only LC-engine)	Replace with correct routed hoses
	Incorrect ignition timing because of loose stator bolts	Readjust to correct ignition timing specifications, secure bolts with Loctite 243
	Incorrect compression ratio	Measure and adjust compression ratio
Emission of white smoke (steam) (only LC-engine)	Cylinder head or O-ring of cylinder head gasket leaks	Check cylinder head, replace O-ring
Excessive oil escapes from transmission breather tube	Excessive oil quantity in transmission	Correct transmission oil level



Resistor values of the ignition system - Stator

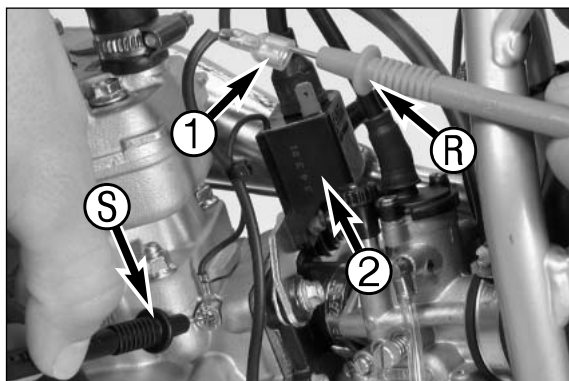
- Unplug the ignition stator and measure the resistance of the stator using a digital measuring tool.
- The resistance must be $500 \Omega \pm 40 \Omega$ at 20°C .

NOTE: it is not necessary to take the stator out of the engine housing.



Ignition coil

- Undo the spark plug cap
- Measure the resistor of the secondary side of the Ignition coil between high tension lead and mass of the coil.
- The resistance must be $2250 \Omega \pm 250 \Omega$ at 20°C .



Measuring static ignition values with peak voltage adapter

Measuring conditions:

- cold engine
- seat and tank removed
- all connector and socket connectors and the ground connection in a non-corroding condition
- kick the kick starter forcefully at least 5 times for each measurement

Check the **pulse generator/charging** coil for an output signal - one-pin connector **1**:

- Apply the red measuring lead **1** of the peak voltage adapter to the connector and the black measuring lead **S** to the ground, disconnect connector **1** from the ignition coil **2**

Multimeter display for 50 SX AC: 220 Volt ± 10 Volt

Multimeter display for 50 SX LC: 270 Volt ± 10 Volt

- Same measurement with connector connected to the ignition coil

Multimeter display for 50 SX AC: 250 Volt ± 10 Volt

Multimeter display for 50 SX LC: 270 Volt ± 10 Volt

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TECHNICAL DATA - ENGINE 50 AC/LC 2002

Engine	50 AC (aircooled)	50 LC (liquid cooled)
Design	single cylinder 2-stroke engine, with reed valve inlet	
Displacement	49,0 cm ³	
Bore/Stroke	39,5 / 40 mm	
Fuel	SUPER fuel, research octane no 95, mixed with 2-stroke oil	
Oil/gasoline ratio	1 : 40 when using high grade 2-stroke oil (Shell Advance Racing X) When in doubt, please contact your importer or use 1 : 33 mix ratio to be on the safe side	
Lubrication	mixture lubrication	
Crankshaft bearing	2 grooved ball bearing	
Connecting rod bearing	needle bearing	
Piston pin bearing	needle bearing	
Piston rings	1 rectangular ring	
Primary drive	straight cut spur gears, 16 : 57 t	
Transmission oil	0.15-0.2 liter gear oil Dexron II (Shell Donax TA)	
Spark plug	NGK BR 8 EH	NGK BR 10 EG
Electrode gap	0,6 mm	
Carburetor	Dell'Orto PHVA 14 DS	Dell'Orto PHVA 14 DS / PHBG 19 BS
Air filter	wet foam type air filter insert	
Coolant	–	0.5 liter (0.132 USgal); water : coolant = 2 : 1

BASIC CARBURETOR SETTING

Model	50 MINI ADVENTURE	50 JUNIOR/SENIOR ADVENTURE	50 SX PRO JUNIOR LC	50 SX PRO SENIOR LC
Type	Dell'Orto PHVA 14 DS	Dell'Orto PHVA 14 DS	Dell'Orto PHVA 14 DS	Dell'Orto PHBG 19 BS
Main jet	60 (70/80)	80 (70)	80	85
Needle jet	211 FA	211 FA	211 FA	260 AU
Idling jet	45	45	45	48
Jet needle	A10	A10	A10	W9
Needle position from top	3.	3.	3.	3.
Air/Mixture reg. screw open	3,5	3,5	3,5	3,0
Slide	40	40	40	60
Starting jet	60	60	60	60

TECHNICAL SPECIFICATIONS - CHASSIS 50 MINI 2002

	50 MINI ADVENTURE	50 JUNIOR ADVENTURE	50 SENIOR ADVENTURE	50 SX PRO JUNIOR LC	50 SX PRO SENIOR LC
Frame	single downtube, split-cradle				
Fork	Marzocchi Ø = 32 mm				
Wheel travel front/rear	115/185 mm (4.5/7.3 in)	135/234 mm (5.3/9.2 in)	175/190 mm (6.9/7.5 in)	135/200 mm (5.3/7.8 in)	175/185 mm (6.9/7.3 in)
Rear suspension	Central shock absorber Paioli MC30				
Front brake	Drum brake Ø 90 mm (3.5 in)				
Rear brake	Drumbrake Ø 90 mm (3.5 in)				
Tyres	front/rear 2.50x10" VRM-140			front/rear 2.50x10" Pirelli MT 32 / 2.75x10" MT 320	
Tire pressure	front/rear: 1.0 bar / 1.0 bar				
Fuel tank capacity	1,8 Liter				
Final drive ratio	11 : 48				
Chain	1/2x3/16" 96 rolls		1/2x3/16" 104 rolls	1/2x3/16" 96 rolls	1/2x3/16" 104 rolls
Steering angle	62°	63°	64°	63°	64°
Wheel base	910 mm (35.8 in)	914 mm (36 in)	1030 mm (40 in)	914 mm (36 in)	1030 mm (40 in)
Seat height, unloaded	590 mm (23.2 in)	615 mm (24.2 in)	650/675 mm (adjustable)(25.6/26.6 in)	615 mm (24.2 in)	650/675 mm (adjustable)(25.6/26.6 in)
Ground clearance	190 mm (7.5 in)	220 mm (8.6 in)	255 mm (10 in)	220 mm (8.6 in)	255 mm (10 in)
Dead weight without fuel	40 kg (88lbs)				
Rider's body height	max. 130 cm (5.1 in)				
Rider's body weight	max. 35 kg (78 lbs)				
Recommended age of rider	4 - 6 years			7 - 8 years	
Engine	50 AC			50 LC	

STANDARD-ADJUSTMENT - FORK		
	50 AC	50 LC
Spring	2,0 N/mm	2,0 N/mm
Preload	10 mm (0.4 in)	10 mm (0.4 in)
Fork oil	SAE 7,5	SAE 7,5
Luftkammerlänge	110 mm (4.3 in)	110 mm (4.3 in)

STANDARD ADJUSTMENT - SHOCK ABSORBER		
	WP 0318W910	WP 0318W911
Rebound adjuster	5	5
Spring	85 N/mm	45 N/mm
Spring preload	7 mm/0.3 in	7 mm/0.3 in

TECHNICAL DATA - ENGINE 50 AC/LC 2003

Engine	50 AC (aircooled)	50 LC (liquid cooled)
Design	single cylinder 2-stroke engine, with reed valve inlet	
Displacement	49,0 cm ³	
Bore/Stroke	39,5 / 40 mm	
Fuel	SUPER fuel, research octane no 95, mixed with 2-stroke oil (separate lubrication only ROZ 95)	
Oil/gasoline ratio	1 : 40 when using high grade 2-stroke oil (Shell Advance Racing X) (separate lubrication Shell Advance Ultra 2)	
Lubrication	mixture lubrication / separate lubrication	
Crankshaft bearing	2 grooved ball bearing	
Connecting rod bearing	needle bearing	
Piston pin bearing	needle bearing	
Piston rings	1 rectangular ring	
Primary drive	straight cut spur gears, 16 : 57 t	
Transmission oil	0.15-0.2 liter gear oil Dexron II (Shell Donax TA)	
Spark plug	NGK BR 8 ECM	
Electrode gap	0,6 mm (0.0236 in)	
Carburetor	Dell'Orto PHVA 14 DS / 12 XS	Dell'Orto PHVA 14 DS / PHBG 19 BS
Air filter	wet foam type air filter insert	
Coolant	–	0.5 liter (0.132 USgal) ; water : coolant = 2 : 1

BASIC CARBURETOR SETTING

Model	50 MINI ADVENTURE (Separate lubrication) Dell'Orto PHVA 12 XS	50 JUNIOR/SENIOR ADVENTURE Dell'Orto PHVA 14 DS	50 SX PRO JUNIOR LC Dell'Orto PHVA 14 DS	50 SX PRO SENIOR LC Dell'Orto PHBG 19 BS
Type				
Main jet	60	80 (70)	80	85
Needle jet	211 FA	211 FA	211 FA	260 AU
Idling jet	38	45	45	48
Jet needle	A10	A10	A10	W9
Needle position from top	4.	3.	3.	3.
Air/Mixture reg. screw open	4	3,5	3,5	3,0
Slide	40	40	40	60
Starting jet	60	60	60	60

TECHNICAL SPECIFICATIONS - CHASSIS 50 MINI 2003						
	50 MINI ADVENTURE	50 JUNIOR ADVENTURE	50 SENIOR ADVENTURE	50 SX PRO JUNIOR LC	50 SX PRO SENIOR LC	
Frame	single downtube, split-cradle					
Fork	Marzocchi Ø = 32 mm					
Wheel travel front/rear	115/185 mm (4.5/7.3 in)	135/234 mm (5.3/9.2 in)	175/190 mm (6.9/7.5 in)	135/200 mm (5.3/7.8 in)	175/185 mm (6.9/7.3 in)	
Rear suspension	Central shock absorber Paioli MC30					
Front brake	Drum brake Ø 90 mm (3.5 in)					
Rear brake	Drumbrake Ø 90 mm (3.5 in)					
Tyres front/rear	2.50x10" VRM-140			250x10" Pirelli MT 32/2.75x10 MT 320	250x12" Vee Rubber V270/2.75x10 V271	
Tire pressure	front/rear: 1.0 bar / 1.0 bar					
Fuel tank capacity	1,8 Liter					
Final drive ratio	11 : 48					
Chain	1/2x3/16" 96 rolls	1/2x3/16" 104 rolls	1/2x3/16" 96 rolls	1/2x3/16" 104 rolls	1/2x3/16" 104 rolls	
Steering angle	62°	63°	64°	63°	64°	
Wheel base	910 mm (35.8 in)	914 mm (36 in)	1030 mm (40 in)	914 mm (36 in)	1030 mm (40 in)	
Seat height, unloaded	590/615 mm (adjustable)	615/640 mm (adjustable)	650/675 mm (adjustable)	590/615 mm (adjustable)	650/675 mm (adjustable)	
	(23.2/24.2 in)	(24.2/25.2 in)	(25.6/26.6 in)	(23.2/24.2 in)	(25.6/26.6 in)	
Ground clearance	190 mm (7.5 in)	220 mm (8.6 in)	255 mm (10 in)	220 mm (8.6 in)	255 mm (10 in)	
Rider's body height	max. 130 cm (5.1 in)					
Rider's body weight	max. 35 kg (78 lbs)					
Recommended age of rider	4 - 6 years			6 - 10 years		
Engine	50 AC			50 LC		
STANDARD-ADJUSTMENT - FORK			STANDARD ADJUSTMENT - SHOCK ABSORBER AC		STANDARD ADJUSTMENT - SHOCK ABSORBER	
	50 AC	50 LC	50 JUNIOR Adventure	50 SENIOR Adventure	WP 0318W910	WP 0318W911
Spring	2,0 N/mm	2,0 N/mm			Rebound adjuster	5
Preload	10 mm (0.4 in)	10 mm (0.4 in)	8 mm/0.31 in	12 mm/0.47 in	Spring	85 N/mm
Fork oil	SAE 7,5	SAE 7,5			Spring preload	7 mm/0.3 in
Air chamber lenght	(4.3 in)110 mm	110 mm (4.3 in)				7 mm/0.3 in

TECHNICAL DATA - ENGINE 50 AC/LC 2004

Engine	MINI AC (separate lubrication)	SENIOR AC (mixture lubrication)	50 SX PRO JUNIOR LC	50 SX PRO SENIOR LC
Design	single cylinder 2-stroke engine, with reed valve inlet			
Displacement	49,0 cm³			
Bore/Stroke	39,5 / 40 mm			
Fuel	Lead-free SUPER FUELf (ROZ 95)	Lead-free SUPER FUEL (ROZ 95), mixed with 2-stroke oil		
Oil/gasoline ratio	–	1 : 40 when using high grade 2-stroke oil (Motorex 2T Cross Power) When in doubt, please contact your importer or use 1 : 33 mix ratio to be on the safe side		
Oil	high-grade two-stroke oils for separate lubrication Motorex Cross Power 2T	high-grade two-stroke oils for mixture lubrication Motorex Cross Power 2T		
Crankshaft bearing	2 grooved ball bearing			
Connecting rod bearing	needle bearing			
Piston pin bearing	needle bearing			
Piston rings	1 rectangular ring			
Primary drive	straight cut spur gears, 16 : 57 Z			
Transmission oil	0.15-0.2 liter gear oil Dexron II (Motorex ATF Super)			
Spark plug	NGK BR 8 ECM			
Electrode gap	0,6 mm			
Carburetor	Dell'Orto PHVA 12 XS	Dell'Orto PHVA 14 DS		Dell'Orto PHBG 19 BS
Air filter	wet foam type air filter insert			
Cooling liquid	–	0.5 litres, 40% antifreeze, 60% water, at least -25 °C		

BASIC CARBURETOR SETTING		
Model	50 MINI ADVENTURE (SEPARATE LUBRICATION)	50 SENIOR ADVENTURE (MIXTURE LUBRICATION)
Type	Dell'Orto PHVA 12 XS	Dell'Orto PHVA 14 DS
Main jet	60	80 (70)
Needle jet	211 FA	211 FA
Idling jet	38	45
Jet needle	A10	A10
Needle position from top	4.	3.
Air/Mixture reg. screw open	4	3,5
Slide	40	40
Starting jet	60	60

BASIC CARBURETOR SETTING		
Model	50 SX PRO JUNIOR LC	50 SX PRO SENIOR LC
Type	Dell'Orto PHVA 14 DS	Dell'Orto PHBG 19 BS
Main jet	80	85
Needle jet	211 FA	211 FA
Idling jet	45	48
Jet needle	A10	W9
Needle position from top	3.	3.
Air/Mixture reg. screw open	3,5	3,0
Slide	40	60
Starting jet	60	60

TECHNICAL SPECIFICATIONS - CHASSIS 50 MINI 2004

	50 MINI ADVENTURE	50 SENIOR ADVENTURE	50 SX PRO JUNIOR LC	50 SX PRO SENIOR LC
Frame	single downtube, split-cradle			
Fork	Marzocchi Ø = 32 mm			
Wheel travel front/rear	115/185 mm	175/190 mm	140/205 mm	185/185 mm
Rear suspension	Central shock absorber Paioli		Central shock absorber WP PDS	
Front brake	Drum brake Ø 90 mm	Disk brake Ø 160 mm		
Rear brake	Drum brake Ø 90 mm		Disk brake Ø 140 mm	
Tires front	2.50x10" Pirelli MT32A	2.50x12" Pirelli MT 32A	2.50x10" Pirelli MT32A	2.50x12" Pirelli MT 32A
Tires rear	2.75x10" Pirelli MT320			
Tire pressure front/rear	1,0 bar / 1,0 bar			
Fuel tank capacity	1,8 Liter			
Final drive ratio	11 : 48		11 : 44	
Chain	1/2x3/16" 96 rolls	1/2x3/16" 104 rolls	1/2x3/16" 96 rolls	1/2x3/16" 104 rolls
Steering angle	66°			
Wheel base	910 mm	1030 mm	910 mm	1030 mm
Seat height, unloaded	590/615 mm (adjustable)	650/675 mm (adjustable)	585/610 mm (adjustable)	650/675 mm (adjustable)
BGround clearance, unloaded	190 mm	255 mm	220 mm	255 mm
Rider's body height	max. 130 cm			
Rider's body weight	max. 35 kg			
Recommended age of rider	4 - 6 years	4 - 7 years		6 - 10 years
Engine	50 AC		50 LC	

STANDARD-ADJUSTMENT - FORK		
	50 AC	50 LC
Spring	2,0 N/mm	2,0 N/mm
Preload	10 mm (0.4 in)	10 mm (0.4 in)
Fork oil	SAE 7,5	SAE 7,5
Air chamber lenght	110 mm (4.3 in)	110 mm (4.3 in)

STANDARD ADJUSTMENT - SHOCK ABSORBER AC		
	50 MINI	50 SENIOR
Spring preload	8 mm/0.31 in	12 mm/0.47 in

STANDARD ADJUSTMENT - SHOCK ABSORBER LC		
	50 SX PRO JUNIOR	50 SX PRO SENIOR
	WP 0318Y914	WP 0318Y915
Rebound adjuster	5	5
Spring	85 N/mm	45 N/mm
Spring preload	10 mm/0.4 in	7 mm/0.3 in

TECHNICAL DATA – ENGINE 2005 AC

ENGINE	50 AC SENIOR ADVENTURE	50 AC MINI ADVENTURE
Design	single cylinder 2-stroke engine, with reed valve inlet	
Displacement	49.0 ccm	
Bore/Stroke	39.5 / 40 mm	
Fuel	Lead-free SUPER FUEL (ROZ 95), mixed with 2-stroke oil	Lead-free SUPER FUEL (ROZ 95)
Lubrication	mixture lubrication	separate lubrication
Oil/gasoline ratio	1 : 40	–
2-stroke oil	high-grade two-stroke oils for mixture lubrication (Motorex Cross Power 2T)	high-grade two-stroke oils for separate lubrication (Motorex Cross Power 2T)
Crankshaft bearing	2 grooved ball bearing	
Connecting rod bearing	needle bearing	
Piston pin bearing	needle bearing	
Piston rings	1 rectangular ring	
Primary drive	straight cut spur gears, 16 : 57 t	
Transmission oil	0.15-0.2 liter gear oil Dexron II (Motorex ATF Super)	
Spark plug	NGK BR 8 ECM	
Electrode gap	0.6 mm	
Carburetor	Dell'Orto PHVA 14 DS	Dell'Orto PHVA 12 XS
Airfilter	wet foam type air filter insert	

BASIC CARBURETOR SETTING		
MODEL	50 SENIOR ADVENTURE	50 MINI ADVENTURE
Type	Dell'Orto PHVA 14 DS	Dell'Orto PHVA 12 XS
Main jet	80 (70)	65 (70)
Needle jet	211 FA	211 FA
Idling jet	45	38
Jet needle	A10	A10
Needle position from top	3.	4.
Air/Mixture reg. screw open	3.5	4
Slide	40	40
Starting jet	60	60

TECHNICAL SPECIFICATIONS – CHASSIS 2005 AC

CHASSIS	50 SENIOR ADVENTURE	50 MINI ADVENTURE
Frame	single downtube, split-cradle	
Fork	Marzocchi Ø = 32 mm (1,26 in)	
Wheel travel front/rear	175/190 mm (6.9/7.5 in)	115/185 mm (4,5/7,3 in)
Rear suspension	Central shock absorber Paioli	
Front brake	Disk brake Ø 160 mm (6.4 in)	Drum brake Ø 90 mm (3,5 in)
Rear brake	Drumbrake Ø 90 mm (3,5 in)	
Tires front/rear	2.50x12" Pirelli MT32A / 2.75x10" MT320	2.50x10" Pirelli MT32A / 2.75x10" MT320
Tire pressure	front/rear: 1.0 bar / 1.0 bar	front/rear: 1.0 bar / 1.0 bar
Fuel tank capacity	2 liter (0.5 gallons)	
Final drive ratio	11 : 48	
Chain	1/2x3/16" 104 rolls	1/2x3/16" 96 rolls
Steering angle	66°	66°
Wheel base	1030 mm (40 in)	910 mm (35.8 in)
Seat height, unloaded	650 or 675 mm (25.6 or 26.6 in) adjustable	530 or 550 mm (21 or 21.7 in) adjustable
Ground clearance	255 mm (10 in)	182mm (7.2 in)
Rider's body height	max. 130 cm (51 in)	
Rider's body weight	max. 35 kg (78 lbs)	
Recommended age of rider	4 - 6 years	
Engine	50 AC	

STANDARD-ADJUSTMENT – FORK	
	50 SENIOR / MINI ADVENTURE
Spring	2,0 N/mm
Preload	10 mm (0.4 in)
Fork oil	SAE 7.5
Air chamber length	110 mm (4.3 in)

STANDARD ADJUSTMENT – SHOCK ABSORBER		
	50 SENIOR ADVENTURE	50 MINI ADVENTURE
Spring preload	12 mm (0.5 in)	8 mm (0.3. in)

TECHNICAL DATA – ENGINE 2005 LC

TYP	50 SX PRO JUNIOR LC	50 SX PRO SENIOR LC
Design	single cylinder 2-stroke engine, with reed valve inlet	
Displacement	49.0 ccm	
Bore/Stroke	39.5 / 40 mm	
Fuel	SUPER fuel, research octane no 95, mixed with 2-stroke oil	
Oil/gasoline ratio	1 : 40 when using high grade 2-stroke oil (Motorex 2T Cross Power) When in doubt, please contact your importer or use 1 : 33 mix ratio to be on the safe side	
Lubrication	mixture lubrication	
Crankshaft bearing	2 grooved ball bearing	
Connecting rod bearing	needle bearing	
Piston pin bearing	needle bearing	
Piston rings	1 rectangular ring	
Primary drive	straight cut spur gears, 16 : 57 Z	
Transmission oil	0.15-0,2 liter automatic gear oil Dexron II (Motorex Topspeed 4T 15W50)	
Spark plug	NGK BR 8 ECM	
Electrode gap	0.6 mm	
Carburetor	Dell'Orto PHVA 14 DS	Dell'Orto PHBG 19 BS
Air filter	wet foam type air filter insert	
Cooling liquid	0.5 litres, 40% antifreeze, 60% water, at least -25 °C (-13 °F)	

BASIC CARBURETOR SETTING		
Model	50 SX PRO JUNIOR LC	50 SX PRO SENIOR LC
Type	Dell'Orto PHVA 14 DS	Dell'Orto PHBG 19 BS
Main jet	80	85
Needle jet	211 FA	260 AU
Idling jet	45	48
Jet needle	A10	W9
Needle position from top	3.	3.
Air/Mixture reg. screw open	3.5	3.0
Slide	40	60
Starting jet	60	60

TECHNICAL SPECIFICATIONS - CHASSIS 2005 LC

	50 SX PRO JUNIOR LC	50 SX PRO SENIOR LC
Frame	single downtube, split-cradle	
Fork	Marzocchi Ø = 32 mm (1.26 in)	
Wheel travel front/rear	140/205 mm (5.5/8 in)	185/185 mm (7.3/7.3 in)
Rear suspension	Central shock absorber WP	
Front brake	Disk brake Ø 160 mm (6.4 in)	
Rear brake	Drum brake Ø 90 mm (3.5 in)	Disk brake Ø 140 mm (5.5 in)
Tires front/rear	2.50x10" Pirelli MT32A / 2.75x10" MT320	2.50x12" Pirelli MT32A / 2.75x10" MT320
Tire pressure	front/rear: 1.0 bar	
Fuel tank capacity	1.8 Liters	
Final drive ratio	11 : 48	10 : 44
Chain	1/2x3/16" 96 rolls	1/2x3/16" 102 rolls
Steering angle	66°	66°
Wheel base	910 mm (35.8 in)	1030 mm (40 in)
Seat height, unloaded	585 mm/610 mm (23/24 in)	650/675 mm (25.6/26.6 in)
Ground clearance	220 mm (8.6 in)	255 mm (10 in)
Rider's body height	max. 130 cm (51 in)	
Rider's body weight	max. 35 kg (78 lbs)	
Recommended age of rider	4-7 years	6-10 years
Engine	50 LC	

STANDARD-ADJUSTMENT – FORK

Spring	2.0 N/mm
Preload	10 mm (0.4 in)
Fork oil	SAE 7.5
Air chamber length	110 mm (4.3 in)

STANDARD ADJUSTMENT – SHOCK ABSORBER

	JUNIOR LC WP 03189A01	SENIOR LC WP 03189A02
Rebound adjuster	5	5
Spring	85 N/mm	45 N/mm
Spring preload	10 mm (0.39 in)	7 mm (0.28 in)

TECHNICAL DATA – ENGINE 2006 AC

ENGINE	50 SENIOR ADVENTURE	50 MINI ADVENTURE
Design	single cylinder 2-stroke engine, with reed valve inlet	
Displacement	49.0 ccm	
Bore/Stroke	39.5 / 40 mm	
Fuel	Lead-free SUPER FUEL (ROZ 95), mixed with 2-stroke oil	Lead-free SUPER FUEL (ROZ 95)
Lubrication	mixture lubrication	separate lubrication
Oil/gasoline ratio	1 : 60	–
2-stroke oil	high-grade two-stroke oils for mixture lubrication (Motorex Cross Power 2T)	high-grade two-stroke oils for separate lubrication (Motorex Cross Power 2T)
Crankshaft bearing	2 grooved ball bearing	
Connecting rod bearing	needle bearing	
Piston pin bearing	needle bearing	
Piston rings	1 rectangular ring	
Primary drive	straight cut spur gears, 16 : 57 t	
Transmission oil	0.15-0.2 liter gear oil Dexron II (Motorex ATF Super)	
Spark plug	NGK BR 8 ECM	
Electrode gap	0.6 mm	
Carburetor	Dell'Orto PHVA 14 DS	Dell'Orto PHVA 12 XS
Airfilter	wet foam type air filter insert	

BASIC CARBURETOR SETTING		
MODEL	50 SENIOR ADVENTURE	50 MINI ADVENTURE
Type	Dell'Orto PHVA 14 DS	Dell'Orto PHVA 12 XS
Main jet	80 (70)	65 (70)
Needle jet	211 FA	211 FA
Idling jet	45	38
Jet needle	A10	A10
Needle position from top	3.	4.
Air/Mixture reg. screw open	3.5	4
Slide	40	40
Starting jet	60	60

TECHNICAL SPECIFICATIONS – CHASSIS 2006 AC

CHASSIS	50 SENIOR ADVENTURE	50 MINI ADVENTURE
Frame	single downtube, split-cradle	
Fork	Marzocchi Ø = 32 mm (1,26 in)	
Wheel travel front/rear	175/190 mm (6.9/7.5 in)	115/185 mm (4,5/7,3 in)
Rear suspension	Central shock absorber Paioli	
Front brake	Disk brake Ø 160 mm (6.4 in)	Drum brake Ø 90 mm (3,5 in)
Rear brake	Drumbrake Ø 90 mm (3,5 in)	
Tires front/rear	2.50x12" Pirelli MT32A / 2.75x10" MT320	2.50x10" Pirelli MT32A / 2.75x10" MT320
Tire pressure	front/rear: 1.0 bar / 1.0 bar	front/rear: 1.0 bar / 1.0 bar
Fuel tank capacity	2 liter (0.5 gallons)	
Final drive ratio	11 : 48	
Chain	1/2x3/16" 104 rolls	1/2x3/16" 96 rolls
Steering angle	66°	66°
Wheel base	1030 mm (40 in)	910 mm (35.8 in)
Seat height, unloaded	650 or 675 mm (25.6 or 26.6 in) adjustable	530 or 550 mm (21 or 21.7 in) adjustable
Ground clearance	255 mm (10 in)	182mm (7.2 in)
Rider's body height	max. 130 cm (51 in)	
Rider's body weight	max. 35 kg (78 lbs)	
Recommended age of rider	4 - 6 years	
Engine	50 AC	

STANDARD-ADJUSTMENT – FORK	
	50 SENIOR / MINI ADVENTURE
Spring	2,0 N/mm
Preload	10 mm (0.4 in)
Fork oil	SAE 7.5
Air chamber length	110 mm (4.3 in)

STANDARD ADJUSTMENT – SHOCK ABSORBER		
	50 SENIOR ADVENTURE	50 MINI ADVENTURE
Spring preload	12 mm (0.5 in)	8 mm (0.3. in)

TECHNICAL DATA – ENGINE 2006 LC

TYP	50 SX JUNIOR	50 SX, 50 SUPERMOTO
Design	single cylinder 2-stroke engine, with reed valve inlet	
Displacement	49.0 ccm	
Bore/Stroke	39.5 / 40 mm	
Fuel	SUPER fuel, research octane no 95, mixed with 2-stroke oil	
Oil/gasoline ratio	1 : 60 when using high grade 2-stroke oil (Motorex 2T Cross Power) When in doubt, please contact your importer	
Lubrication	mixture lubrication	
Crankshaft bearing	2 grooved ball bearing	
Connecting rod bearing	needle bearing	
Piston pin bearing	needle bearing	
Piston rings	1 rectangular ring	
Primary drive	straight cut spur gears, 16 : 57 Z	
Transmission oil	0.15-0,2 liter automatic gear oil Dexron II (Motorex Topspeed 4T 15W50)	
Spark plug	NGK BR 8 ECM	
Electrode gap	0.6 mm	
Carburetor	Dell'Orto PHVA 14 DS	Dell'Orto PHBG 19 BS
Air filter	wet foam type air filter insert	
Cooling liquid	0.5 litres, 50% antifreeze, 50% water, at least -25 °C (-13 °F)	

BASIC CARBURETOR SETTING		
Model	50 SX JUNIOR	50 SX, 50 SUPERMOTO
Type	Dell'Orto PHVA 14 DS	Dell'Orto PHBG 19 BS
Main jet	80	85
Needle jet	211 FA	260 AU
Idling jet	45	48
Jet needle	A10	W9
Needle position from top	3.	3.
Air/Mixture reg. screw open	3.5	3.0
Slide	40	60
Starting jet	60	60

TECHNICAL SPECIFICATIONS - CHASSIS 2006 LC

	50 SX JUNIOR	50 SX	50 SUPERMOTO
Frame	single downtube, split-cradle		
Fork	Marzocchi Ø = 32 mm (1.26 in)		
Wheel travel front/rear	140/205 mm (5.5/8 in)	185/185 mm (7.3/7.3 in)	
Rear suspension	Central shock absorber WP		
Front brake	Disk brake Ø 160 mm (6.4 in)		
Rear brake	Drum brake Ø 90 mm (3.5 in)	Disk brake Ø 140 mm (5.5 in)	
Tires front	2.50x10" Pirelli MT32A	2.50x12" Pirelli MT32A	90/90-10 Pirelli SL26
Tires rear	2.75x10" MT320		90/90-10 Pirelli SL26
Tire pressure	front/rear: 1.0 bar		
Fuel tank capacity	1,8 Liter		
Final drive ratio	11 : 48	10 : 44	
Chain	1/2 x 3/16" 96 rolls	1/2 x 3/16" 102 rolls	
Steering angle	66°		
Wheel base	910 mm (35.8 in)	1030 mm (40 in)	
Seat height unloaded	585 mm/610 mm (23/24 in)	650/675 mm (25.6/26.6 in)	
Ground clearance unloaded	220 mm (8.6 in)	255 mm (10 in)	
Rider's body height	max. 130 cm (51 in)		
Rider's body weight	max. 35 kg (78 lbs)		
Recommended age of rider	4 - 7 years	6 - 10 years	
Engine	50 LC		

STANDARD-ADJUSTMENT – FORK

Spring	2,0 N/mm
Preload	10 mm (0.4 in)
Fork oil	SAE 7,5
Air chamber length	110 mm (4.3 in)

STANDARD ADJUSTMENT – SHOCK ABSORBER

	50 SX JUNIOR WP 03189B01	50 SX, 50 SUPERMOTO WP 03189B02
Rebound adjuster	5	5
Spring	85 N/mm	45 N/mm
Spring preload	10 mm (0.39 in)	7 mm (0.28 in)

TECHNICAL DATA – ENGINE 2007 AC

ENGINE	50 AC SENIOR ADVENTURE	50 AC MINI ADVENTURE
Design	single cylinder 2-stroke engine, with reed valve inlet	
Displacement	49.0 ccm	
Bore/Stroke	39.5 / 40 mm	
Fuel	Lead-free SUPER FUEL (RON 95), mixed with 2-stroke oil	Lead-free SUPER FUEL (RON 95)
Lubrication	mixture lubrication	separate lubrication
Oil/gasoline ratio	1 : 60	–
2-stroke oil	high-grade two-stroke oils for mixture lubrication (Motorex Cross Power 2T)	high-grade two-stroke oils for separate lubrication (Motorex Cross Power 2T)
Crankshaft bearing	2 grooved ball bearing	
Connecting rod bearing	needle bearing	
Piston pin bearing	needle bearing	
Piston rings	1 rectangular ring	
Primary drive	straight cut spur gears, 16 : 57 t	
Transmission oil	0.15-0.2 liter (0.033-0.044 US gal) gear oil Dexron II (Motorex ATF Super)	
Spark plug	NGK BR 8 ECM	
Electrode gap	0.6 mm (0.0236 in)	
Carburetor	Dell'Orto PHVA 14 DS	Dell'Orto PHVA 12 XS
Airfilter	wet foam type air filter insert	

BASIC CARBURETOR SETTING		
MODEL	50 SENIOR ADVENTURE	50 MINI ADVENTURE
Type	Dell'Orto PHVA 14 DS	Dell'Orto PHVA 12 XS
Main jet	80 (70)	65 (70)
Needle jet	211 FA	211 FA
Idling jet	45	38
Jet needle	A10	A10
Needle position from top	3 rd	4 th
Air/Mixture reg. screw open	3.5	4
Slide	40	40
Starting jet	60	60

TECHNICAL SPECIFICATIONS – CHASSIS 2007 AC

CHASSIS	50 SENIOR ADVENTURE	50 MINI ADVENTURE
Frame	single downtube, split-cradle	
Fork	Marzocchi Ø = 32 mm (1,26 in)	
Wheel travel front/rear	175/190 mm (6.9/7.5 in)	115/185 mm (4,5/7,3 in)
Rear suspension	Central shock absorber Paioli	
Front brake	Disk brake Ø 160 mm (6.4 in)	Drum brake Ø 90 mm (3,5 in)
Rear brake	Drumbrake Ø 90 mm (3,5 in)	
Tires front/rear	2.50x12" Pirelli MT32A / 2.75x10" MT320	2.50x10" Pirelli MT32A / 2.75x10" MT32A
Tire pressure	front/rear: 1.0 bar / 1.0 bar	front/rear: 1.0 bar / 1.0 bar
Fuel tank capacity	2 liter (0.52 US gallons)	
Final drive ratio	11 : 48	
Chain	1/2x3/16" 104 rolls	1/2x3/16" 96 rolls
Steering angle	66°	66°
Wheel base	1030 mm (40 in)	910 mm (35.8 in)
Seat height, unloaded	650 or 675 mm (25.6 or 26.6 in) adjustable	530 or 550 mm (21 or 21.7 in) adjustable
Ground clearance	255 mm (10 in)	182mm (7.2 in)
Rider's body height	max. 130 cm (51 in)	
Rider's body weight	max. 35 kg (78 lbs)	
Recommended age of rider	4 - 6 years	
Engine	50 AC	

STANDARD-ADJUSTMENT – FORK	
	50 SENIOR / MINI ADVENTURE
Spring	2,0 N/mm
Preload	10 mm (0.4 in)
Fork oil	SAE 7.5
Air chamber length	110 mm (4.3 in)

STANDARD ADJUSTMENT – SHOCK ABSORBER		
	50 SENIOR ADVENTURE	50 MINI ADVENTURE
Spring preload	12 mm (0.5 in)	8 mm (0.3. in)

TECHNICAL DATA – ENGINE 2007 LC

ENGINE	50 SX JUNIOR	50 SX
Design	single cylinder 2-stroke engine, with reed valve inlet	
Displacement	49.0 cc	
Bore/Stroke	39.5 / 40 mm	
Fuel	SUPER fuel, research octane no 95, mixed with 2-stroke oil	
Oil/gasoline ratio	1 : 60 when using high grade 2-stroke oil (Motorex 2T Cross Power) When in doubt, please contact your importer	
Lubrication	mixture lubrication	
Crankshaft bearing	2 grooved ball bearing	
Connecting rod bearing	needle bearing	
Piston pin bearing	needle bearing	
Piston rings	1 rectangular ring	
Primary drive	straight cut spur gears, 16 : 57 Z	
Transmission oil	0.15-0,2 liter automatic gear oil Dexron II (Motorex Topspeed 4T 15W50)	
Spark plug	NGK BR 8 ECM	
Electrode gap	0.6 mm	
Carburetor	Dell'Orto PHVA 14 DS	Dell'Orto PHBG 19 BS
Air filter	wet foam type air filter insert	
Cooling liquid	0.5 litres, 50% antifreeze, 50% distilled water, at least -25 °C (-13 °F)	

BASIC CARBURETOR SETTING		
Model	50 SX Junior	50 SX
Type	Dell'Orto PHVA 14 DS	Dell'Orto PHBG 19 BS
Main jet	80	85
Needle jet	211 FA	260 AU
Idling jet	45	48
Jet needle	A10	W9
Needle position from top	3.	3.
Air/Mixture reg. screw open	3.5	3.0
Slide	40	60
Starting jet	60	60

TECHNICAL SPECIFICATIONS - CHASSIS 2007 LC

ENGINE	50 SX JUNIOR	50 SX
Design	single cylinder 2-stroke engine, with reed valve inlet	
Displacement	49.0 cc	
Bore/Stroke	39.5 / 40 mm	
Fuel	SUPER fuel, research octane no 95, mixed with 2-stroke oil	
Oil/gasoline ratio	1 : 60 when using high grade 2-stroke oil (Motorex 2T Cross Power) When in doubt, please contact your importer	
Lubrication	mixture lubrication	
Crankshaft bearing	2 grooved ball bearing	
Connecting rod bearing	needle bearing	
Piston pin bearing	needle bearing	
Piston rings	1 rectangular ring	
Primary drive	straight cut spur gears, 16 : 57 Z	
Transmission oil	0.15-0,2 liter automatic gear oil Dexron II (Motorex Topspeed 4T 15W50)	
Spark plug	NGK BR 8 ECM	
Electrode gap	0.6 mm	
Carburetor	Dell'Orto PHVA 14 DS	Dell'Orto PHBG 19 BS
Air filter	wet foam type air filter insert	
Cooling liquid	0.5 litres, 50% antifreeze, 50% distilled water, at least -25 °C (-13 °F)	

BASIC CARBURETOR SETTING		
Model	50 SX Junior	50 SX
Type	Dell'Orto PHVA 14 DS	Dell'Orto PHBG 19 BS
Main jet	80	85
Needle jet	211 FA	260 AU
Idling jet	45	48
Jet needle	A10	W9
Needle position from top	3.	3.
Air/Mixture reg. screw open	3.5	3.0
Slide	40	60
Starting jet	60	60

TECHNICAL DATA – ENGINE 2008 AC

ENGINE	50 AC MINI SX	50 AC MINI ADVENTURE
Design	single cylinder 2-stroke engine, with reed valve inlet	
Displacement	49,0 cm ³	
Bore/Stroke	39,5 / 40 mm	
Fuel	Lead-free SUPER FUEL (RON 95)	
Lubrication	seperate lubrication	
2-stroke oil	high-grade two-stroke oils for separate lubrication (Motorex Cross Power 2T)	
Crankshaft bearing	2 grooved ball bearing	
Connecting rod bearing	needle bearing	
Piston pin bearing	needle bearing	
Piston rings	1 rectangular ring	
Primary drive	straight cut spur gears, 16 : 57 t	
Transmission oil	0,15-0,2 liter (0.033-0.044 US gal) gear oil Dexron II (Motorex ATF Super)	
Spark plug	NGK BR 8 ECM	
Electrode gap	0,6 mm (0,0236 in)	
Carburetor	Dell'Orto PHVA 12 XS	
Airfilter	wet foam type air filter insert	

BASIC CARBURETOR SETTING		
MODEL	50 MINI SX	50 MINI ADVENTURE
Type	Dell'Orto PHVA 12 XS	Dell'Orto PHVA 12 XS
Main jet	70	65 (70)
Needle jet	211 FA	211 FA
Idling jet	38	38
Jet needle	A10	A10
Needle position from top	4 th	4 th
Air/Mixture reg. screw open	1	4
Slide	40	40
Starting jet	60	60

TECHNICAL SPECIFICATIONS - CHASSIS 2008 AC

ENGINE	50 AC MINI SX	50 AC MINI ADVENTURE
Design	single cylinder 2-stroke engine, with reed valve inlet	
Displacement	49,0 cm ³	
Bore/Stroke	39,5 / 40 mm	
Fuel	Lead-free SUPER FUEL (RON 95)	
Lubrication	seperate lubrication	
2-stroke oil	high-grade two-stroke oils for separate lubrication (Motorex Cross Power 2T)	
Crankshaft bearing	2 grooved ball bearing	
Connecting rod bearing	needle bearing	
Piston pin bearing	needle bearing	
Piston rings	1 rectangular ring	
Primary drive	straight cut spur gears, 16 : 57 t	
Transmission oil	0,15-0,2 liter (0.033-0.044 US gal) gear oil Dexron II (Motorex ATF Super)	
Spark plug	NGK BR 8 ECM	
Electrode gap	0,6 mm (0,0236 in)	
Carburetor	Dell'Orto PHVA 12 XS	
Airfilter	wet foam type air filter insert	

BASIC CARBURETOR SETTING		
MODEL	50 MINI SX	50 MINI ADVENTURE
Type	Dell'Orto PHVA 12 XS	Dell'Orto PHVA 12 XS
Main jet	70	65 (70)
Needle jet	211 FA	211 FA
Idling jet	38	38
Jet needle	A10	A10
Needle position from top	4 th	4 th
Air/Mixture reg. screw open	1	4
Slide	40	40
Starting jet	60	60

TECHNICAL DATA – ENGINE 2008 LC

ENGINE	50 SX JUNIOR	50 SX
Design	single cylinder 2-stroke engine, with reed valve inlet	
Displacement	49.0 cc	
Bore/Stroke	39.5 / 40 mm	
Fuel	SUPER fuel, research octane no 95, mixed with 2-stroke oil	
Oil/gasoline ratio	1 : 60 when using high grade 2-stroke oil (Motorex 2T Cross Power) When in doubt, please contact your importer	
Lubrication	mixture lubrication	
Crankshaft bearing	2 grooved ball bearing	
Connecting rod bearing	needle bearing	
Piston pin bearing	needle bearing	
Piston rings	1 rectangular ring	
Primary drive	straight cut spur gears, 16 : 57 Z	
Transmission oil	0.15-0,2 liter automatic gear oil Dexron II (Motorex Topspeed 4T 15W50)	
Spark plug	NGK BR 8 ECM	
Electrode gap	0.6 mm	
Carburetor	Dell'Orto PHVA 14 DS	Dell'Orto PHBG 19 BS
Air filter	wet foam type air filter insert	
Cooling liquid	0.5 litres, 50% antifreeze, 50% distilled water, at least -25 °C (-13 °F)	

BASIC CARBURETOR SETTING		
Model	50 SX Junior	50 SX
Type	Dell'Orto PHVA 14 DS	Dell'Orto PHBG 19 BS
Main jet	80	85
Needle jet	211 FA	260 AU
Idling jet	45	48
Jet needle	A10	W9
Needle position from top	3.	3.
Air/Mixture reg. screw open	3.5	3.0
Slide	40	60
Starting jet	60	60

TECHNICAL SPECIFICATIONS - CHASSIS 2008 LC

CHASSIS	50 SX JUNIOR	50 SX
Frame	single downtube, split-cradle	
Fork	Marzocchi Ø = 32 mm	
Wheel travel front/rear	140/205 mm (5.5/8 in)	185/185 mm (7.3/7.3 in)
Rear suspension	Central shock absorber WP	
Front brake	Disk brake Ø 160 mm (6.4 in)	
Rear brake	Drum brake Ø 90 mm (3.5 in)	Disk brake Ø 140 mm (5.5 in)
Tires front	Pirelli 2.50-10 33J Scorpion	Pirelli 60/100-12 36NHS Scorpion
Tires rear	Pirelli 2.75-10 37J Scorpion	Pirelli 2.75-10 37J Scorpion
Tire pressure	front/rear: 1.0 bar	
Fuel tank capacity	1.8 Liters	
Final drive ratio	11 : 48	10 : 44
Chain	1/2x3/16" 96 rolls	1/2x3/16" 102 rolls
Steering angle	66°	
Wheel base	910 mm (35.8 in)	1030 mm (40 in)
Seat height, unloaded	585 mm/610 mm (23/24 in)	650/675 mm (25.6/26.6 in)
Ground clearance	220 mm (8.6 in)	255 mm (10 in)
Rider's body height	max. 130 cm (51 in)	
Rider's body weight	max. 35 kg (78 lbs)	
Recommended age of rider	4-7 years	6-10 years
Engine	50 LC	

STANDARD-ADJUSTMENT – FORK

Spring	2,0 N/mm
Preload	10 mm (0.4 in)
Fork oil	SAE 7,5
Air chamber length	110 mm (4.3 in)

STANDARD ADJUSTMENT - SHOCK ABSORBER

	50 SX Junior WP 03189D01	50 SX WP 03189D02
Rebound adjuster	12	10
Spring	75 N/mm	35 N/mm
Spring preload	5 mm (0.2 in)	3 mm (0.12 in)

TOLERANCES AND FITTING CLEARANCES

Crankshaft	run out of crank stud	max. 0.050 mm
Crankshaft webs outer dimension		38 mm \pm 0.05 mm
Conrod bearing	radial play	max. 0.030 mm
Piston	fitting clearance	0.055-0.065 mm (AC) / 0.045-0.055 mm (LC)
Piston ring	end gap	max. 0.20 mm
Clutch shoes	outer diameter	new 82.5 mm
Clutch drum	diameter	max. 84.4 mm (new 84.00 - 84.01 mm)
Clutch springs (AC)	length	min. 19.6 mm

TIGHTENING TORQUES - ENGINE

Hexagon nut primary gear	M14x1.25	40 Nm
Hexagon nut ignition rotor	M10x1.25	20 Nm
Hexagon nut of clutch hub	M10x1.25	Loctite 243 + 35 Nm
HH bolts clutch shoes	M6	Loctite 243 + 12 Nm
Cylinder head bolts	M7	15 Nm
Cylinder base nuts	M8	18 Nm
Allen head bolt-Stator	M5	Loctite 243 + 8 Nm
Oil plug	M16	5 Nm
Oil drain plug	M10	15 Nm
Other bolts engine	M5	7 Nm
	M6	10 Nm
	M8	30 Nm


TIGHTENING TORQUES - CHASSIS

Hexagon nuts front/rear axle		M12x1	40 Nm
Hexagon nut swing arm bolt		M10	45 Nm
		M12	40 Nm
HH bolts of top triple clamp		M8	20 Nm
HH bolts of bottom triple clamp		M6	10 Nm
		M8	15 Nm
Steering head bolt / nut		M20x1,5	30 / 10 Nm
HH bolts handlebar clamp		M8	20 Nm
Shock absorber top/bottom		M10	45 Nm
Allen head bolt - Handlebar support		M10	Loctite + 40 Nm
Front brake caliper		M8	Loctite + 20 Nm
Front/rear brake disk		M6	Loctite + 10 Nm
		M6 (10.9)	Loctite + 15 Nm
Fixing screw brake pads		M6	4 Nm
Spoke nipple	Mini Adventure	M3.5	2,0 - 2,5 Nm
	SX / Senior Adventure / Supermoto	M4	2,5 - 3,0 Nm
Other bolts chassis		M5	6 Nm
		M6	10 Nm
		M8	25 Nm
		M10	45 Nm

LUBRICATION AND MAINTENANCE SCHEDULE 9

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		PERIODIC MAINTENANCE 2002		50 MINIS air/liquid cooled	
A washed motorcycle can be checked more quickly which saves money!				Service	Service
				every	every
				5 hours	20 hours
ENGINE	Check engine for leaks	●			
	Change transmission oil	●			
	Check spark plug, change it if necessary, set electrode gap		●		
	Check the clutch engagement speed	●			
CARBURETOR	Check carburetor for tight fit at intake flange		●		
	Check intake flange for cracks		●		
	Check idle setting when engine is warm		●		
ADD-ON-PARTS	Check cooling system for leaks, antifreeze protection		●		
	Check exhaust system for leaks and suspension		●		
	Check actuating cables for damage, smooth operation, and kink-less arrangement, adjust and lubricate	●			
	Clean air filter and air filter box				
	BRAKES	Check fluid level, lining thickness, brake discs		●	
Check brake lines for damage			●		
Check/adjust smooth operation, free travel of hand/footbrake levers		●			
Check bolts of brake system for tight fit		●			
CHASSIS	Check suspension strut and fork for leaks and proper function		●		
	Check swinging-fork pivot		●		
	Check/adjust steering-head bearing		●		
	Check all chassis bolts for tight fit (fork plates, axle nuts, swinging-fork pivot, suspension strut)		●		
WHEELS	Check spoke tension and rim joint	●			
	Check tire condition and inflation pressure		●		
	Check chain, chain wheels, chain wheel guides for wear, tight fit, and tension	●			
	Lubricate chain	●			
	Check wheel bearings for play	●			
IMPORTANT RECOMMENDED MAINTENANCE PROCEDURES TO BE PERFORMED BASED ON A SEPARATE SUPPLEMENTARY ORDER					
					once
					a year
Drain and clean the carburetor's float chamber					●
Perform complete fork maintenance					●
Clean and lubricate the swinging-arm bearing					●
Clean and lubricate the steering-head bearing and sealing elements					●
Change brake fluid					●

MAINTENANCE WORK DONE BY KTM AUTHORISED WORKSHOPS IS NOT A SUBSTITUTE OF CARE AND CHECKS DONE BY THE RIDER!

VITAL CHECKS AND CARE PROCEDURES TO BE CONDUCTED BY THE OWNER OR THE MECHANIC

	before each start	after every cleaning	for cross country use	once a year
Check transmission oil level	●			
Check coolant level	●			
Check brake fluid level	●			
Check brake pads for wear	●			
Check brake performance	●	●		
Lubricate and adjust actuating cables and nipples		●		
Remove and clean dust sleeves of telescopic fork in regular intervals			●	
Clean and lubricate chain, check tension and readjust it if necessary		●	●	
Clean air filter and filter box			●	
Check tire inflation pressure and wear	●			
Check fuel line for leaks	●			
Drain and clean float chamber		●		
Verify smooth operation of all controls	●			
Treat exposed metal components (except for the brake and exhaust systems) with wax-based anti-corrosion agents		●		
Check all bolts, nuts, and hose clamps for their tight fit in regular intervals				●

 PERIODIC MAINTENANCE 2003-2005		50 MINIS air/liquid cooled	
A washed motorcycle can be checked more quickly which saves money!		Service	Service
		every	every
		5 hours	20 hours
ENGINE	Check engine for leaks	●	
	Change transmission oil	●	
	Check spark plug, change it if necessary, set electrode gap		●
	Check the clutch engagement speed	●	
CARBURETOR	Check carburetor for tight fit at intake flange		●
	Check intake flange for cracks		●
	Check idle setting when engine is warm		●
ADD-ON-PARTS	Check cooling system for leaks, antifreeze protection		●
	Check exhaust system for leaks and suspension		●
	Check actuating cables for damage, smooth operation, and kink-less arrangement, adjust and lubricate	●	
	Clean air filter and air filter box	●	
BRAKES	Check fluid level, lining thickness, brake discs		●
	Check brake lines for damage		●
	Check/adjust smooth operation, free travel of hand/footbrake levers	●	
	Check bolts of brake system for tight fit	●	
CHASSIS	Check suspension strut and fork for leaks and proper function		●
	Check swinging-fork pivot		●
	Check/adjust steering-head bearing		●
	Check all chassis bolts for tight fit (fork plates, axle nuts, swinging-fork pivot, suspension strut)		●
WHEELS	Check spoke tension and rim joint	●	
	Check tire condition and inflation pressure		●
	Check chain, chain wheels, chain wheel guides for wear, tight fit, and tension	●	
	Lubricate chain	●	
	Check wheel bearings for play	●	
IMPORTANT RECOMMENDED MAINTENANCE PROCEDURES TO BE PERFORMED BASED ON A SEPARATE SUPPLEMENTARY ORDER			
		once	
		a year	
Drain and clean the carburetor's float chamber		●	
Perform complete fork maintenance		●	
Clean and lubricate the swinging-arm bearing		●	
Clean and lubricate the steering-head bearing and sealing elements		●	
Change brake fluid		●	

MAINTENANCE WORK DONE BY KTM AUTHORISED WORKSHOPS IS NOT A SUBSTITUTE OF CARE AND CHECKS DONE BY THE RIDER!


VITAL CHECKS AND CARE PROCEDURES TO BE CONDUCTED BY THE OWNER OR THE MECHANIC

	before each start	after every cleaning	for cross country use	once a year
Check transmission oil level	●			
Check cooling liquid level	●			
Check brake fluid level	●			
Check brake pads for wear	●			
Check brake performance	●	●		
Lubricate and adjust actuating cables and nipples		●		
Remove and clean dust sleeves of telescopic fork at regular intervals			●	
Clean and lubricate chain, check tension and readjust it if necessary		●	●	
Clean air filter and filter box			●	
Check tire inflation pressure and wear	●			
Check fuel line for leaks	●			
Drain and clean float chamber		●		
Verify smooth operation of all controls	●			
Treat exposed metal components (except for the brake and exhaust systems) with wax-based anti-corrosion agents		●		
Check all bolts, nuts, and hose clamps for their tight fit at regular intervals				●

RECOMMENDED INSPECTION OF THE MINI AC/LC ENGINE BY YOUR KTM WORKSHOP (ADDITIONAL ORDER FOR THE KTM WORKSHOP)

	30	45	60	90	120	135
	hours	hours	hours	hours	hours	hours
Check the reed-type intake valve for wear	●	●	●	●	●	●
Check the clutch shoes for wear	●	●	●	●	●	●
Check the length of the clutch springs (AC)	●	●	●	●	●	●
Check the clutch drum for wear	●	●	●	●	●	●
Check the water pump shaft and bearings for wear	●	●	●	●	●	●
Check the water pump wheel for wear	●	●	●	●	●	●
Check the cylinder and piston for wear	●	●	●	●	●	●
Check the eccentricity of the crankshaft journal	●	●	●	●	●	●
Check the radial clearance of the conrod bearings	●		●		●	
Check the radial clearance of the piston pin main bearing	●		●		●	
Check the crankshaft main bearing for wear	●		●		●	
Replace the crankshaft bearings and conrod bearings		●		●		●
Check the entire transmission including bearings for wear		●		●		●

NOTE: IF THE INSPECTION ESTABLISHES THAT PERMISSIBLE TOLERANCES ARE EXCEEDED, THE RESPECTIVE COMPONENTS MUST BE REPLACED.

		PERIODIC MAINTENANCE 2006		50 MINIS air/liquid cooled
A washed motorcycle can be checked more quickly which saves money!		Service	Service	before
		every	every	every
		5 hours	20 hours	race
ENGINE	Check engine for leaks	●	●	
	Change transmission oil	●	●	
	Check spark plug, change it if necessary, set electrode gap		●	
	Check the clutch engagement speed	●		●
CARBURETOR	Check carburetor for tight fit at intake flange		●	
	Check intake flange for cracks		●	
	Check idle setting when engine is warm		●	
ADD-ON-PARTS	Check cooling system for leaks, antifreeze protection		●	
	Check exhaust system for leaks and correct fit		●	
	Check actuating cables for damage, smooth operation, and kink-less arrangement, adjust and lubricate	●	●	●
	Clean air filter and air filter box	●	●	●
BRAKES	Check fluid level, lining thickness, brake discs		●	●
	Check brake lines and brake control cables for damage		●	●
	Check/adjust function, smooth operation and free travel of hand/footbrake levers	●	●	●
	Check bolts of brake system for tight fit	●	●	●
CHASSIS	Check suspension strut and fork for leaks and proper function		●	●
	Check swinging-fork pivot		●	●
	Check/adjust steering-head bearing		●	●
	Check all chassis bolts for tight fit (fork plates, axle nuts, swinging-fork pivot, suspension strut)		●	●
WHEELS	Check spoke tension and rim joint	●	●	●
	Check tire condition and inflation pressure		●	●
	Check chain, chain wheels, chain wheel guides for wear, tight fit, and tension	●	●	●
	Lubricate chain	●	●	●
	Check wheel bearings for play	●	●	●
IMPORTANT RECOMMENDED MAINTENANCE PROCEDURES TO BE PERFORMED BASED ON A SEPARATE SUPPLEMENTARY ORDER				
				once
				a year
Drain and clean the carburetor's float chamber				●
Perform complete fork maintenance				●
Clean and lubricate the swinging-arm bearing				●
Clean and lubricate the steering-head bearing and sealing elements				●
Change brake fluid				●

MAINTENANCE WORK DONE BY KTM AUTHORISED WORKSHOPS IS NOT A SUBSTITUTE OF CARE AND CHECKS DONE BY THE RIDER!


VITAL CHECKS AND CARE PROCEDURES TO BE CONDUCTED BY THE OWNER OR THE MECHANIC

	before each start	after every cleaning	for cross country use	once a year
Check transmission oil level	●			
Check cooling liquid level	●			
Check brake fluid level	●			
Check brake pads for wear	●			
Check brake performance	●	●		
Lubricate and adjust actuating cables and nipples		●		
Remove and clean dust sleeves of telescopic fork at regular intervals			●	
Clean and lubricate chain, check tension and readjust it if necessary		●	●	
Clean air filter and filter box			●	
Check tire inflation pressure and wear	●			
Check fuel line for leaks	●			
Drain and clean float chamber		●		
Check oil lines for cracks or kinks (for separate lubrication only)	●			
Verify smooth operation of all controls	●			
Treat exposed metal components (except for the brake and exhaust systems) with wax-based anti-corrosion agents		●		
Check all bolts, nuts, and hose clamps for their tight fit at regular intervals				●

RECOMMENDED INSPECTION OF THE MINI AC/LC ENGINE BY YOUR KTM WORKSHOP (ADDITIONAL ORDER FOR THE KTM WORKSHOP)

	after every 20 hours	after every 40 hours
Check the reed-type intake valve for wear	●	●
Check the clutch shoes for wear	●	●
Check the length of the clutch springs (AC)	●	●
Check the clutch drum for wear	●	●
Check the water pump shaft and bearings for wear	●	●
Check the water pump wheel for wear	●	●
Check the cylinder and piston for wear	●	●
Check the oil pump (only separate lubrication)	●	●
Check the eccentricity of the crankshaft journal	●	●
Check the radial clearance of the conrod bearings	●	
Check the radial clearance of the piston pin main bearing	●	
Check the crankshaft main bearing for wear	●	
Replace the crankshaft bearings and conrod bearings		●
Check the entire transmission including bearings for wear		●

NOTE: IF THE INSPECTION ESTABLISHES THAT PERMISSIBLE TOLERANCES ARE EXCEEDED, THE RESPECTIVE COMPONENTS MUST BE REPLACED.

		PERIODIC MAINTENANCE 2007		50 MINIS air/liquid cooled
A washed motorcycle can be checked more quickly which saves money!		Service every 5 hours	Service every 20 hours	before every race
ENGINE	Check engine for leaks	●	●	
	Change transmission oil	●	●	
	Check spark plug, change it if necessary, set electrode gap		●	
	Check the clutch engagement speed	●		●
CARBURETOR	Check carburetor for tight fit at intake flange		●	
	Check intake flange for cracks		●	
	Check idle setting when engine is warm		●	
ADD-ON-PARTS	Check cooling system for leaks, antifreeze protection		●	
	Check exhaust system for leaks and correct fit		●	
	Check actuating cables for damage, smooth operation, and kink-less arrangement, adjust and lubricate	●	●	●
	Clean air filter and air filter box	●	●	●
BRAKES	Check fluid level, lining thickness, brake discs		●	●
	Check brake lines and brake control cables for damage		●	●
	Check/adjust function, smooth operation and free travel of hand/footbrake levers	●	●	●
	Check bolts of brake system for tight fit	●	●	●
CHASSIS	Check suspension strut and fork for leaks and proper function		●	●
	Check swinging-fork pivot		●	●
	Check/adjust steering-head bearing		●	●
	Check all chassis bolts for tight fit (fork plates, axle nuts, swinging-fork pivot, suspension strut)		●	●
WHEELS	Check spoke tension and rim joint	●	●	●
	Check tire condition and inflation pressure		●	●
	Check chain, chain wheels, chain wheel guides for wear, tight fit, and tension	●	●	●
	Lubricate chain	●	●	●
	Check wheel bearings for play	●	●	●

ADDITIONAL SERVICE WORK TO BE PERFORMED UNDER A SEPARATE ORDER	every 20 hours	every 40 hours	once a year
Check the reed-type intake valve for wear	●	●	
Check the clutch shoes for wear	●	●	
Check the length of the clutch springs	●	●	
Check the clutch drum for wear	●	●	
Check the water pump shaft and bearings for wear	●	●	
Check the water pump wheel for wear	●	●	
Check the cylinder and piston for wear	●	●	
Check the oil pump (only separate lubrication)	●	●	
Check the eccentricity of the crankshaft journal	●	●	
Check the radial clearance of the conrod bearings	●		
Check the radial clearance of the piston pin main bearing	●		
Check the crankshaft main bearing for wear	●		
Replace the crankshaft bearings and conrod bearings		●	
Check the entire transmission including bearings for wear		●	
Drain and clean the carburetor's float chamber			●
Perform complete fork maintenance			●
Clean and lubricate the swinging-arm bearing			●
Clean and lubricate the steering-head bearing and sealing elements			●
Change brake fluid			●

NOTE: If the inspection establishes that permissible tolerances are exceeded, the respective components must be replaced.

The kilometer reading for inspection intervals should not exceed 5 hours.

Maintenance work performed by your authorized KTM workshop is not a substitute for care and maintenance by the driver!

VITAL CHECKS AND CARE PROCEDURES TO BE CONDUCTED BY THE OWNER OR THE MECHANIC				
	before each start	after every cleaning	for cross country use	once a year
Check transmission oil level	●			
Check cooling liquid level	●			
Check brake fluid level	●			
Check brake pads for wear	●			
Check brake performance	●	●		
Lubricate and adjust actuating cables and nipples		●		
Remove and clean dust sleeves of telescopic fork at regular intervals			●	
Clean and lubricate chain, check tension and readjust it if necessary		●	●	
Clean air filter and filter box			●	
Check tire inflation pressure and wear	●			
Check fuel line for leaks	●			
Drain and clean float chamber		●		
Check oil lines for cracks or kinks (for separate lubrication only)	●			
Verify smooth operation of all controls	●			
Treat exposed metal components (except for the brake and exhaust systems) with wax-based anti-corrosion agents		●		
Check all bolts, nuts, and hose clamps for their tight fit at regular intervals				●



PERIODIC MAINTENANCE 2008

50 Mini SX
50 Mini Adventure

A CLEAN MOTORCYCLE CAN BE CHECKED MORE QUICKLY WHICH SAVES MONEY!		Service every 5 hours	Service every 20 hours
Engine	Check engine for leaks	●	●
	Change transmission oil	●	●
	Check spark plug, change it if necessary, set electrode gap		●
	Adjust the clutch engagement speed.	●	●
Carburetor	Check carburetor for tight fit at intake flange		●
	Check intake flange for cracks		●
	Check idle setting when engine is warm		●
Add-on-parts	Check exhaust system for leaks and suspension		●
	Check actuating cables for damage, smooth operation, and kinkless, arrangement, adjust and lubricate	●	●
	Clean air filter and air filter box	●	●
Brakes	Check brake fluid level, lining thickness, brake discs (50 Mini SX)		●
	Check brake cables for damage		●
	Check/function adjust smooth operation, free travel of hand levers	●	●
	Check screws of brake system for a tight fit	●	●
Chassis	Check suspension strut and fork for leaks and a proper function		●
	Check swinging-fork pivot		●
	Check/adjust steering-head bearing		●
	Check all chassis screws for a tight fit (fork plates, axle nuts, swinging-fork pivot, suspension strut)		●
Wheels	Check spoke tension and rim joint	●	●
	Check tire condition and inflation pressure		●
	Check chain, chain joint, chain wheels, chain wheel guides for wear, a tight fit, and tension	●	●
	Lubricate chain	●	●
	Check wheel bearings for play	●	●

ADDITIONAL SERVICE WORK TO BE PERFORMED UNDER A SEPARATE ORDER.


	every 20 hours	every 40 hours	once a year
Check the reed-type intake valve for wear	●	●	
Check the clutch shoes for wear	●	●	
Check the length of the clutch springs	●	●	
Check the clutch drum for wear	●	●	
Check the cylinder and piston for wear	●	●	
Check the oil pump (only separate lubrication)	●	●	
Check the eccentricity of the crankshaft journal	●	●	
Check the radial clearance of the conrod bearings	●		
Check the radial clearance of the piston pin main bearing	●		
Check the crankshaft main bearing for wear	●		
Replace the crankshaft bearings and conrod bearings		●	
Check the entire transmission including bearings for wear		●	
Drain and clean the carburetor's float chamber			●
Perform complete fork maintenance			●
Clean and lubricate the swinging-arm bearing			●
Clean and lubricate the steering-head bearing and sealing elements			●
Change brake fluid (50 Mini SX)			●

Maintenance work done by KTM authorized workshops is not a substitute for care and checks done by the rider!

Note: If the inspection establishes that permissible tolerances are exceeded, the respective components must be replaced.

VITAL CHECKS AND CARE PROCEDURES TO BE CONDUCTED BY THE OWNER OR THE MECHANIC

	before each start	after every cleaning	for cross country use	once a year
Check transmission oil level	●			
Check brake fluid level (50 Mini SX)	●			
Check brake pads for wear	●			
Check brake performance	●	●		
Lubricate and adjust actuating cables and nipples		●		
Remove and clean dust sleeves of telescopic fork at regular intervals			●	
Clean and lubricate chain, check tension and readjust it if necessary		●	●	
Clean air filter and filter box			●	
Check tire inflation pressure and wear	●			
Check fuel line for leaks	●			
Drain and clean float chamber		●		
Check oil lines for cracks or kinks (for separate lubrication only)	●			
Verify smooth operation of all controls	●			
Treat exposed metal components (except for the brake and exhaust systems) with wax-based anti-corrosion agents		●		
Check all screws, nuts, and hose clamps for their tight fit at regular intervals				●

 PERIODIC MAINTENANCE 2008		50 SX Junior 50 SX		
A CLEAN MOTORCYCLE CAN BE CHECKED MORE QUICKLY WHICH SAVES MONEY!		Service every 5 hours	Service every 20 hours	before every race
ENGINE	Check engine for leaks	●	●	
	Change transmission oil	●	●	
	Check spark plug, change it if necessary, set electrode gap		●	
	Check the clutch engagement speed	●	●	●
CARBURETOR	Check carburetor for a tight fit at intake flange		●	
	Check intake flange for cracks		●	
	Check idle setting when engine is warm		●	
ADD-ON-PARTS	Check cooling system for leaks, check quantity of antifreeze		●	
	Check exhaust system for leaks and suspension		●	
	Check actuating cables for damage, smooth operation, and kinkless arrangement, adjust and lubricate	●	●	●
	Clean air filter and air filter box	●	●	●
BRAKES	Check brake fluid level, lining thickness, brake discs		●	●
	Check the brake line and the brake control cable for damage		●	●
	Check/function adjust smooth operation, free travel of handbrake/footbrake levers	●	●	●
	Check screws of brake system for a tight fit	●	●	●
CHASSIS	Check suspension strut and fork for leaks and a proper function		●	●
	Check swinging-fork pivot		●	●
	Check/adjust steering-head bearing		●	●
	Check all chassis screws for a tight fit (fork plates, axle nuts, swinging-fork pivot, suspension strut)		●	●
WHEELS	Check spoke tension and rim joint	●	●	●
	Check tire condition and inflation pressure		●	●
	Check chain, chain joint, chain wheels, chain wheel guides for wear, a tight fit, and tension	●	●	●
	Lubricate chain	●	●	●
	Check wheel bearings for play	●	●	●

ADDITIONAL SERVICE WORK TO BE PERFORMED UNDER A SEPARATE ORDER	every 20 hours	every 40 hours	once a year
Check the reed-type intake valve for wear	●	●	
Check the clutch shoes for wear	●	●	
Check the clutch drum for wear	●	●	
Check the water pump shaft and bearings for wear	●	●	
Check the water pump wheel for wear	●	●	
Check the cylinder and piston for wear	●	●	
Check the eccentricity of the crankshaft journal	●	●	
Check the radial clearance of the conrod bearings	●		
Check the radial clearance of the piston pin main bearing	●		
Check the crankshaft main bearing for wear	●		
Replace the crankshaft bearings and conrod bearings		●	
Check the entire transmission including bearings for wear		●	
Drain and clean the carburetor's float chamber			●
Perform complete fork maintenance			●
Perform complete shock absorber maintenance			●
Clean and lubricate the swinging-arm bearing			●
Clean and lubricate the steering-head bearing and sealing elements			●
Change brake fluid			●

NOTE: If the inspection establishes that permissible tolerances are exceeded, the respective components must be replaced.

The kilometer reading for inspection intervals should not exceed 5 hours.

Maintenance work performed by your authorized KTM workshop is not a substitute for care and maintenance by the driver!

NOTE: A service hour counter (item no.: SXS05450600) is available from your KTM dealer for strict observance of the service intervals.

50 SX JUNIOR 50 SX	before each start	after every cleaning	for cross country use	once a year
VITAL CHECKS AND CARE PROCEDURES TO BE CONDUCTED BY THE OWNER OR THE MECHANIC				
Check transmission oil level	●			
Check cooling liquid level	●			
Check brake fluid level	●			
Check brake pads for wear	●			
Check brake performance	●	●		
Lubricate and adjust actuating cables and nipples		●		
Remove and clean dust sleeves of telescopic fork at regular intervals			●	
Clean and lubricate chain, check tension and readjust it if necessary		●	●	
Clean air filter and filter box			●	
Check tire inflation pressure and wear	●			
Check fuel line for leaks	●			
Drain and clean float chamber		●		
Verify smooth operation of all controls	●			
Treat exposed metal components (except for the brake and exhaust systems) with wax-based anti-corrosion agents		●		
Check all screws, nuts, and hose clamps for their tight fit at regular intervals				●

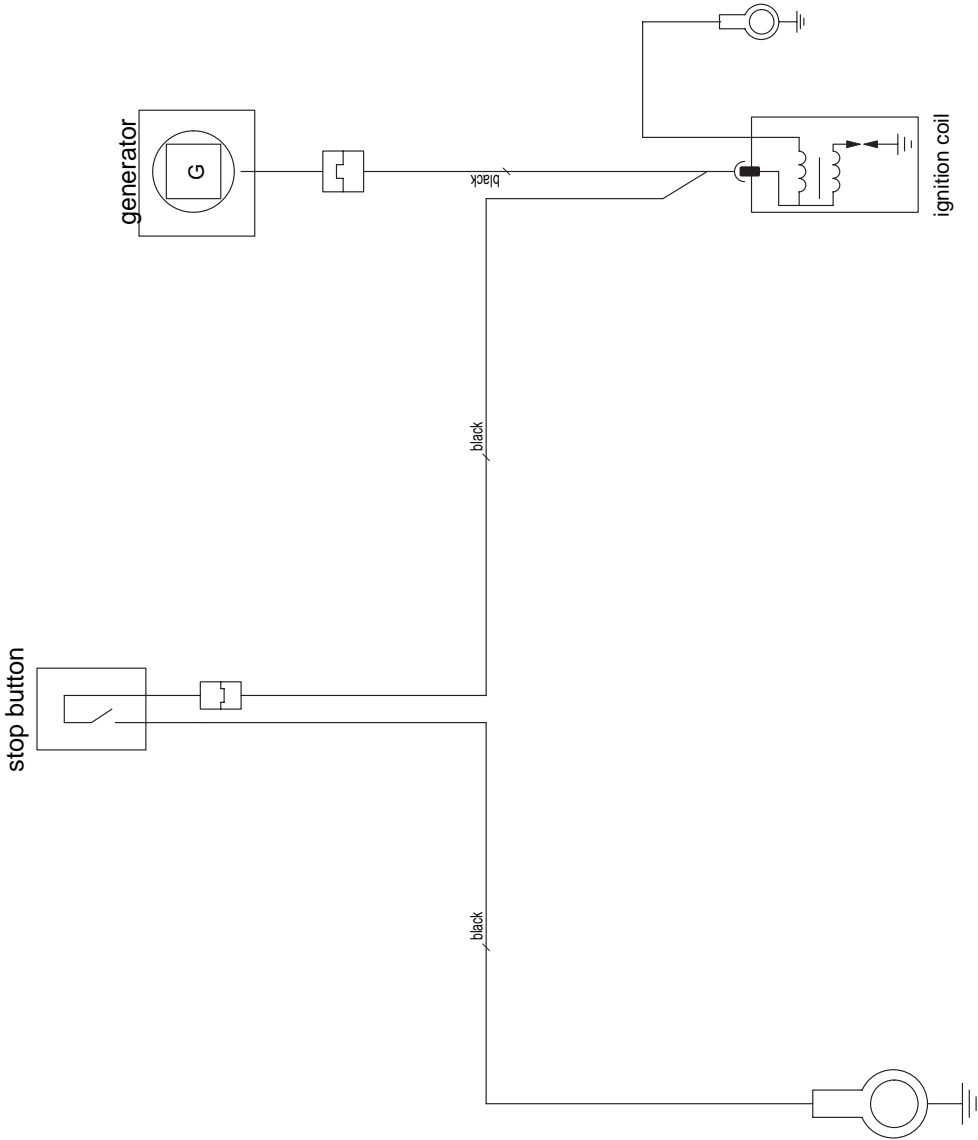
WIRING DIAGRAM

10

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WIRING DIAGRAM10-2

Cable colours:
black = black



50 AC/LC

20.02.2004

OWNER'S MANUAL 2007

50 SENIOR ADVENTURE 50 MINI ADVENTURE

ART. NR. 3.211.140 GB



ENGLISH



Now you own a modern motorcycle that you and your youngster will certainly enjoy, provided that you service and maintain it properly.

Please insert the serial numbers of the motorcycle below

Chassis number

Engine number

Stamp of dealer

All information contained is without obligation. KTM-Sportmotorcycle AG particularly reserves the right to modify any equipment, technical specifications, prices, colors, shapes, materials, services, service work, constructions, equipment and the like so as to adapt them to local conditions or to cancel any of the above items, all without previous announcement and without giving reasons. KTM may stop manufacturing certain models without previous notice. KTM shall not be held liable for any deviations of availability and/or ability to deliver, illustrations, descriptions, printing and/or other errors. The illustrated models partly contain extra equipment, which is not applied to standard models.

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In accordance with the international quality management ISO 9001 standard, KTM uses quality assurance processes that lead to the highest possible product quality.

INTENDED PURPOSE

KTM mini-sports motorcycles are designed and constructed to resist the usual wear and tear of normal use in competitions.

The motorcycles comply with the regulations and categories currently in effect with the leading international motorcycle associations.

OWNER'S MANUAL

Please read this manual thoroughly before letting your youngster ride the motorcycle for the first time. This manual contains important information and recommendations that will help you and your youngster to operate and handle the motorcycle properly. In the interest of everybody involved, we urge you to pay particular attention to instructions and information marked as follows:

WARNING

- Ignoring these instructions can be dangerous to life and limb!

CAUTION

- Ignoring these instructions may damage parts of the motorcycle or impair the motorcycle's traffic safety!

This manual contains important information on the operation and maintenance of your new KTM motorcycle. It went to press describing your model's latest state of development. Nevertheless, the descriptions may deviate slightly from the current design as our motorcycles are permanently improved. The Owner's Manual is an integral part of the motorcycle and must be handed over to the new owner when the motorcycle is sold.

SERVICE

Observance of the service, maintenance and tuning instructions for the engine and chassis specified in the Owner's Manual is a prerequisite for faultless operation and the avoidance of premature wear. An improperly tuned chassis can lead to damage and breakage of the chassis components (see chapter on checking the basic chassis setting).

The use of the motorcycle under extreme conditions, e.g. on extremely muddy and wet terrain, can lead to higher than average wear on components such as the drive train or the brakes. In this case it may become necessary to service or replace wear parts before the service limit specified in the maintenance schedule has been reached.

We expressly point out that work marked with an asterisk (*) in the chapter "Maintenance work on the chassis and engine" must be performed by a KTM workshop. If maintenance work should become necessary during a competition, it must be performed by a trained mechanic.

Please strictly observe the prescribed running-in periods and inspection and maintenance intervals. Compliance with these instructions will significantly prolong the life of your motorcycle.

WARRANTY

The service work specified in the "Lubrication and Maintenance Schedule" must be performed by a KTM workshop and recorded in the service manual otherwise claims under the warranty shall become void. No claims can be filed under the warranty for damage or consequential damage caused by manipulations or conversions to the motorcycle.

AUTOMOTIVE FLUIDS

The fuels and lubricants specified in the Owner's Manual or automotive fluids with equivalent specifications must be used in accordance with the maintenance schedule.

SPARE PARTS, ACCESSORIES

For the safety of your child, only use spare parts and accessories approved by KTM. KTM shall not assume any liability for other products or consequential damage resulting from the use of such products.

When special needs arise, please contact a KTM dealer, who will seek the assistance of the KTM importer if necessary.

SAFETY

Parents should keep in mind that the safety of their youngsters always depends on the efforts made by the parents to ensure that the motorcycle is kept in good working order and only used on safe terrains. Nevertheless, driving the motorcycle, like driving any other vehicle, involves a potential risk. Therefore, please make sure that all fundamental precautions are taken. Please also read the „INFORMATION ON SAFE DRIVING FOR PARENTS“ on page 4.

TRANSPORT

When transporting your motorcycle, secure it with elastic straps or other mechanical devices in an upright position. Be sure that the fuel tap is closed. If the motorcycle topples over, fuel can flow out of the carburetor or fuel tank.

ENVIRONMENT

Riding an off-highway motorcycle is a wonderful form of outdoor recreation and we certainly hope that you and your youngsters will enjoy it to the full. However, this enjoyable outdoor activity can cause environmental problems or lead to conflicts with other people. Responsible use of the motorcycle will prevent such problems and conflicts. You can contribute to securing the future of motorcycling by making sure that you and your youngsters only use the motorcycle within the limits established by the applicable laws, making environmental protection one of your top priorities and never violating other people's rights.

In this spirit, we hope that you and your youngsters will always safely enjoy your motorcycle!

KTM-SPORTMOTORCYCLE AG
5230 MATTIGHOFEN, AUSTRIA

Attachments: 1 spare parts manual chassis & engine



KTM mini motorcycles are off-road motorcycles designed for one person only. They are not allowed on public roads.

The vehicle dimensions and components are designed for children from 4 to 6 years of age with a maximum weight of 35 kg (78 lbs) and a maximum height of 130 cm (51 in).

- Have your youngster wear proper protective gear whenever he or she rides the motorcycle: helmet, eye protection, chest, back, arm and leg protectors, gloves and boots. To set a good example, be sure to wear protective gear yourself whenever riding a motorcycle!
- Before your youngster takes his or her first ride, explain how each of the controls works and check if your youngster has understood what you explained. We recommend to review the entire owner's manual with your youngster item by item, paying particular attention to the specially marked warnings and pointing out the danger of injury.
- Instruct your youngster about riding and falling techniques, explain how the motorcycle will respond to shifting of the rider's weight, etc.
- Before starting the motorcycle for the first time check whether the basic fork and shock absorber settings are suitable for your child's weight (see chapter on checking the basic chassis setting).
- Before using the motorcycle you should always check all components for proper operation (see maintenance schedule). Have your youngster perform these technical checks himself / herself as well.
- Whenever you go for a ride with your youngster, keep in mind that the speed should be adjusted to your youngster and not the other way around.
- Your youngster must understand that all instructions he or she receives from you or any other supervising adult must be followed.
- Your child must be physically ready to ride a motorcycle. This means that he or she must at least be able to ride a bicycle. Being good at sports that require fast reactions is an additional advantage. Your youngster should be strong enough to pick up the motorcycle after a fall.
- Never demand too much of your youngster. Give him or her time to get used to the motorcycle and to improve his / her riding skills. Do not even consider letting your youngster participate in a race before his / her physical condition, riding skills and motivation have sufficiently developed.
- Explain to your youngster that he / she should always adjust his / her riding speed to the local conditions as well as to his / her own riding skills and that excessive speed can cause falls and severe injuries. Always keep in mind that youngsters tend to underestimate dangers or fail to recognize them altogether. The riding speed must be reduced, in particular, on unknown terrain.
- Never let your youngster ride the motorcycle without supervision. An adult should always be present.
- The motorcycle is designed for one rider only. Your youngster is not allowed to transport a passenger.
- When you go for a ride, somebody at home should always know where you are going and when you will be back. This makes it easier to send you help, should problems occur.

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SERIAL NUMBER LOCATIONS »



Chassis number

The chassis number is located on the type plate on the steering head. Enter this number in the field on page no 1.



Engine number

The engine number is stamped into the right half of the engine case next to the kickstarter. Enter this number in the relevant field on page 1.

OPERATION INSTRUMENTS »



Throttle grip

The throttle grip is located on the right side of the handlebars. It is used to reduce the engine speed and, thus, the driving speed.



Right hand brake lever (50 Mini Adventure)

The right hand brake lever is used to operate the front wheel brake via a control cable.



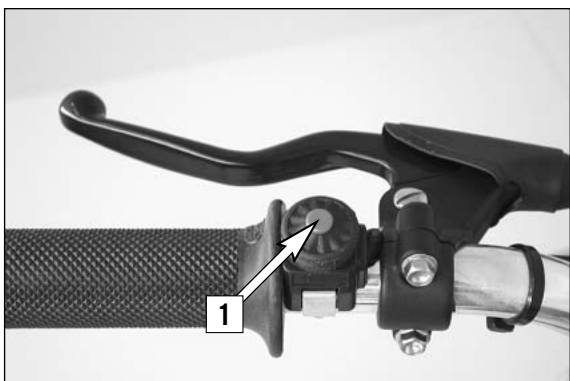
Hand brake lever (50 Senior Adventure)

The hand brake lever is located on the right side of the handlebars and actuates the front wheel brake. The basic position can be adjusted to fit your child's hand.



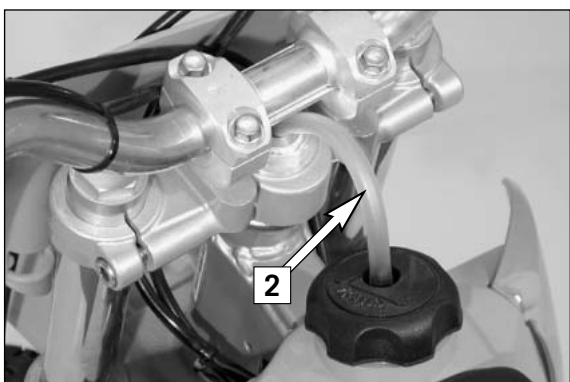
Left hand brake lever

The left hand brake lever is used to operate the rear wheel brake via a control cable.



Short circuit button

The short circuit button [1] turns off the engine. When pressing this button, the ignition circuit is short-circuited.



Filler cap

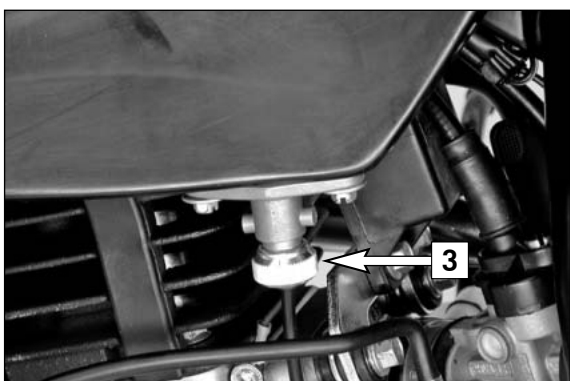
To open it:

Turn filler cap counter-clockwise.

To close it:

Put filler cap back on and tighten it by turning it clockwise.

Install tank breather hose [2] without kinks.



Fuel tap

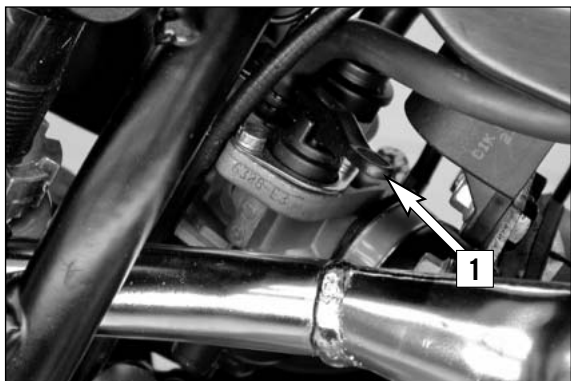
The fuel tap [3] is located at the front of the motorcycle on the left side of the tank.

Opening the fuel tap:

Turn the knob all the way to the left.

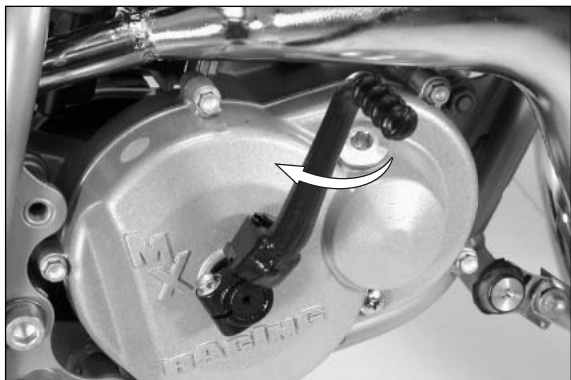
Closing the fuel tap:

Turn the knob all the way to the right.



Choke

The choke lever [1] is located on the right side of the carburetor. When pulling the choke lever fully towards the top, a bore is opened in the carburetor. Through this bore the engine can take in additional fuel. This results in a rich fuel-air mixture that is needed for a cold start. When pressing the choke lever downward in the carburetor, the bore is closed again.



Kickstarter

The kickstarter is mounted on the right side of the engine. Its upper part can be swivelled.

NOTE: an accessory kit for kickstarter backwards operation is available.



Side stand

Use your foot to swing the side stand forwards to the stop. Make sure it rests securely on solid ground.



Instructions for the first ride

- Make sure the work for the „pre-delivery inspection“ was performed by your authorized KTM workshop. The DELIVERY CERTIFICATE and SERVICE MANUAL will be handed over when you pick up your vehicle.
- Please note that this model (50 MINI ADVENTURE) has SEPARATE LUBRICATION (see page 13)
- Before your youngster takes his or her first ride, explain how each of the controls works and check if your youngster has understood what you explained. We recommend to review the entire owner's manual with your youngster item by item, paying particular attention to the specially marked warnings and pointing out the danger of injury.
- Adjust the basic hand brake lever position to your youngster's hand size. Your youngster should, of course, wear gloves!
- To prevent injury, teach your youngster the basic riding skills on soft ground, e.g. on a meadow or in the garden. Be sure that there is room enough to maneuver, and that no other riders are close.
- To ensure that your youngster gets the feel of the brakes, have your youngster operate the brakes while you push the motorcycle. Do not start the engine before your youngster has learned to apply both brakes with appropriate pressure.
- Now your youngster must get the feel of the throttle. Start the engine, hold the motorcycle and have your youngster slowly open the throttle. Then, your youngster can take his/her first ride. Initially, your youngster should ride back and forth between two persons who help the young rider to stop the motorcycle. However, you should also teach your youngster how to stop the motorcycle himself/herself.
- To improve his/her riding skills, your youngster should practice riding the motorcycle standing on the footpegs or riding at the slowest possible speed. Additionally, you can arrange a series of obstacles and have your youngster drive around them, etc. Tell your youngster to look 3-10 m ahead, depending on the speed, to recognize and avoid obstacles. When riding through curves, the rider should also look far ahead into the curve.
- Pay attention to running-in procedure.

Running in

- Even very precisely machined sections of engine components have rougher surfaces than components which have been sliding across one another for quite some time. Therefore, every engine needs to be broken in. For this reason, during its first 5 hours the engine must not be revved up to its performance limits.
- Apply low but changing loads for running-in.
- DO NOT DRIVE AT FULL LOAD FOR THE FIRST 5 HOURS!

⚠ WARNING

- Have your youngster wear proper protective gear whenever he or she rides the motorcycle: helmet, eye protection, chest, back, arm and leg protectors, gloves and boots. To set a good example, be sure to wear protective gear yourself whenever riding a motorcycle!
- The motorcycle has a centrifugal clutch. The motorcycle begins to move as soon as the throttle is opened.
- Always apply the front brake when starting the engine and release the brake slowly when the engine is running. An activated choke increases the idle speed of the engine, the centrifugal clutch thus beginning to engage. Therefore, the motorcycle can begin to move when the brake levers are released.
- When the engine speed drops to the level at which the centrifugal clutch disengages, braking with the engine is no longer possible and the motorcycle can only be slowed down using the brakes.
- Your child should never drive faster than its skills and the terrain permit.
- Never let your child drive its motorcycle unchaperoned.
- Replace the helmet visor or goggle glasses early enough. When light shines directly on a scratched visor or goggles, you will be practically blind.
- Only use accessory parts recommended by KTM.
- Never leave your motorcycle without supervision as long as the engine is running.
- KTM mini models are designed for one person only. Passengers are not allowed.
- These models do not comply with the regulations and safety standards established by the law. Therefore, they are not permitted on public roads.
- Always keep in mind that other people feel molested by excessive noise.



What you should check before each start

When you start off, the motorcycle must be in a perfect technical condition. For safety reasons, you should make it a habit to perform an overall check of your motorcycle before each start.

The following checks should be performed:

1 CHECK TRANSMISSION OIL LEVEL

A lack of gear oil leads to premature wear and finally results in destruction of the gear wheels.

2 FUEL

Check that there is sufficient fuel in the tank; when closing the filler cap, check that the tank venting hose is free of kinks.

3 CHAIN

A loose chain may fall off the chain wheels; an extremely worn chain may tear, and insufficient lubrication may result in unnecessary wear of the chain and chain wheels.

4 TIRES

Check for damaged tires. Tires showing cuts or dents must be replaced. Also check the air pressure. Insufficient tread and incorrect air pressure deteriorate the driving performance.

5 THROTTLE CABLE

Check the throttle cable for proper adjustment and smooth operation.

6 BRAKES

Check the brakes for proper adjustment and correct operation. Check the brake fluid level for the disk brake (50 Senior Adventure).

7 OIL TANK (50 MINI ADVENTURE)

Check the oil level in the tank. A shortage of two-stroke engine oil will lead to engine damage.





Starting when the engine is cold

- 1 Open fuel tap [1].
- 2 Operate the choke [2].
- 3 Swing the side stand all the way up.
- 4 Squeeze both brake levers.
- 5 Operate the kickstarter, depressing it all the way, without opening the throttle.

⚠ WARNING

- When starting the engine, put on motorcycle boots in order to avoid injuries. You may slip off the kickstarter, or the engine may kick back if you do not kick hard enough.
- Do not start the engine and allow it to idle in a closed area. Exhaust fumes are poisonous and can cause loss of consciousness and death. Always provide adequate ventilation while the engine is running.
- Never tilt the motorcycle over the side stand to warm up the engine. The side stand could fold away and the motorcycle run out of control.

! CAUTION

Driving a cold engine at high speed will reduce the life of the engine. We recommend to warm the engine up at a medium engine speed for several minutes before switching to full load.

Note: If you have trouble starting the motorcycle, this could be due to old fuel in the float chamber. The easily inflammable components of the new fuels evaporate during longer periods of standstill. When the motorcycle has been out of operation for more than a week, it is therefore recommended to drain the old fuel from the float chamber. The engine will immediately start off when the float chamber is filled with new fuel.

Starting when the engine is warm

- 1 Open fuel tap [1].
- 2 Swing the side stand all the way up.
- 3 Squeeze both brake levers.
- 4 Operate the kickstarter, depressing it all the way, without opening the throttle.

What to do when the engine is „flooded“

- 1 Close fuel tap [1].
- 2 Squeeze both brake levers.
- 3 Start engine with full throttle. If necessary, unscrew spark plug and dry it.
- 4 Once the engine is running, open fuel tap again.

Starting off

Slowly release the brake lever while simultaneously opening the throttle.

⚠ WARNING

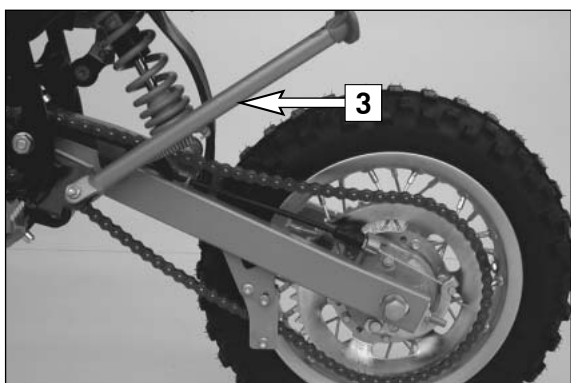
Always make sure the side stand [3] is kicked all the way up before you let your child drive off. If the stand drags on the floor, you may lose control of your motorcycle.

Driving

The engine speed, and thus the driving speed, are regulated by the throttle grip. The choke must always be deactivated as soon as the engine has warmed up.

! CAUTION

- In the event that, while your child is riding on the motorcycle, you notice any unusual operation-related noise, your child should stop immediately, turn the engine off, and contact an authorized KTM dealer.
- After falling with the motorcycle, check all its functions thoroughly before using it again.
- A bent handlebar must always be replaced. Never try to straighten the handlebar because this will cause it to lose its stability.





Braking

Close the throttle and squeeze both brake levers simultaneously. On sandy, wet or slippery terrain the rear wheel brake should be preferred. The brakes should always be operated carefully as locking wheels can cause skidding or falls.

⚠ WARNING

- Brake drum and linings heat up during brake operation, thus reducing the effect of the brakes.
- Wet brakes have reduced brake performance, therefore be sure to brake them dry after cleaning.
- If the resistance of the hand brake lever feels unresponsive, something is wrong with the brake system. Have the brake system checked at a KTM workshop before you let your child drive the motorcycle.



Stopping

Reduce the speed. Immediately before the motorcycle comes to a stop, put the left foot down. To turn off the engine, press the short circuit button until the engine stops. Close the fuel tap.

⚠ WARNING

Motorcycles produce great heat during operation. Therefore, keep in mind that the engine, the exhaust system and the brakes can heat up considerably. Make sure that these parts are not touched and always take care, when parking the motorcycle, that other persons will not burn themselves.

! CAUTION

- Close the fuel tap when leaving the motorcycle. Otherwise the carburetor may get flooded and fuel will enter the engine.
- The side stand is only designed for the weight of the motorcycle. If you get on the motorcycle and thus put additional weight on the side stand, the side stand or the frame can be damaged and the motorcycle may fall on the side.



Refuelling, fuel/oil (50 Senior Adventure)

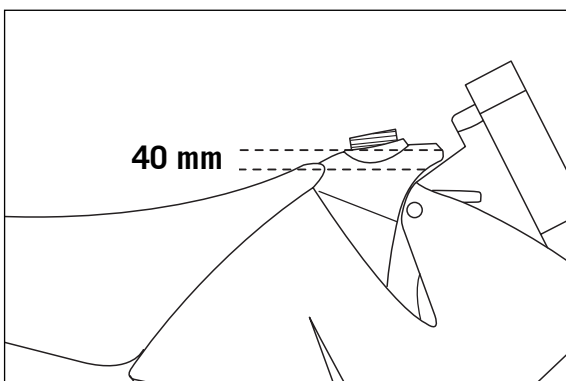
Oil (high-grade two-stroke engine oil) must be mixed with the fuel (RON 95) at a mixing ratio of 1:60.

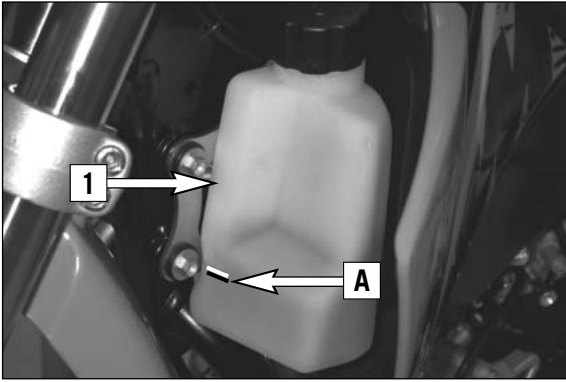
⚠ WARNING

Gasoline is highly flammable and poisonous. Extreme caution should be used when handling gasoline. Never refuel the motorcycle near open flames or burning cigarettes. Always switch off the engine before refueling. Be careful not to spill gasoline on the engine or exhaust pipe while the engine is hot. Wipe up spills promptly. If gasoline is swallowed or splashed in the eyes, seek a doctor's advice immediately.

! CAUTION

- Only use premium-grade gasoline RON 95 mixed with high-grade two-stroke engine oil. Other types of gasoline can cause engine failure.
- Only use known brands of high-grade 2-stroke engine oil.
- Not enough oil or low-grade oil can cause erosion of the piston. When using too much oil, the engine may start smoking and foul the spark plug.
- Fuel expands when its temperature rises. Therefore do not fill the tank to the top. (see fig.)





Refuelling, fuel/oil (50 Mini Adventure)

FUEL:

Refuel with pure fuel (RON 95) for separate lubrication.

OIL:

The oil tank [1] is mounted on the left side in front of the fuel tank. Here, the two-stroke oil for separate lubrication of the engine must be filled in. The oil level can easily be checked through the transparent material of the oil tank.

Engine oil:

2-stroke engine oil suitable for separate lubrication

KTM recommends Motorex Cross Power 2T



To open it:

turn closure cap counterclockwise.

To close it:

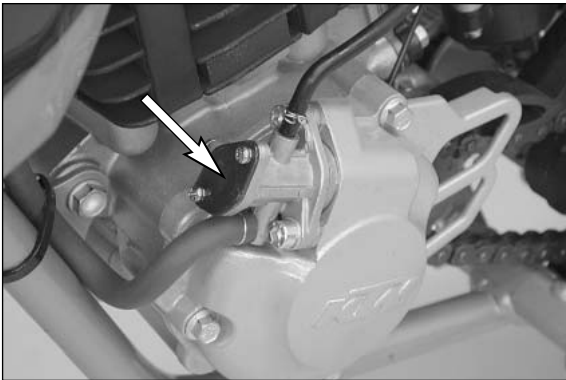
apply closure cap and turn it clockwise.

Tank volume: 0.3 liters

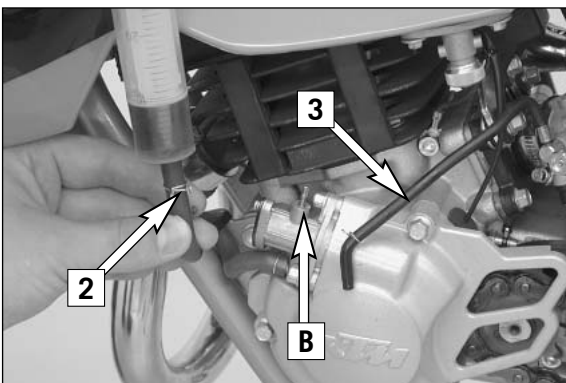
! CAUTION

Once there is no two-stroke oil in the oil tank, the engine is bound to break down.

When you refuel, the oil in fresh-oil tank [1] should reach up to the [A] mark. This amount of oil is enough for a full fuel tank.



The oil pump is mounted on the ignition cover and is powered by the crankshaft.



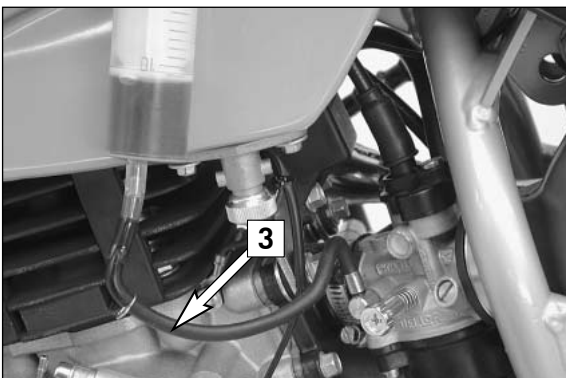
Bleeding the oil system (50 Mini Adventure)

If the oil tank is empty and air has gotten into the oil system, the oil system must be bled.

To bleed, disconnect the oil line [2] from the oil tank and the oil line [3] from the oil pump. Add oil with a syringe until the bubble-free oil leaks out of hole [B] on the oil pump. Connect the oil line [2] to the oil tank. Use the syringe to bleed the oil line [3] to the carburetor and connect to the oil pump. Afterwards, fill the oil tank with Motorex Cross Power 2T engine oil.

! CAUTION

Always make sure you run the oil hoses without kinks.



PERIODIC MAINTENANCE »

A CLEAN MOTORCYCLE CAN BE CHECKED MORE QUICKLY WHICH SAVES MONEY!		50 Senior Adventure 50 Mini Adventure 2007	Service every 5 hours	Service every 20 hours
Engine	Check engine for leaks		●	●
	Change transmission oil		●	●
	Check spark plug, change it if necessary, set electrode gap			●
	Adjust the clutch engagement speed.		●	●
Carburetor	Check carburetor for tight fit at intake flange			●
	Check intake flange for cracks			●
	Check idle setting when engine is warm			●
Add-on-parts	Check exhaust system for leaks and suspension			●
	Check actuating cables for damage, smooth operation, and kinkless, arrangement, adjust and lubricate		●	●
	Clean air filter and air filter box		●	●
Brakes	Check brake fluid level, lining thickness, brake discs (50 Senior Adventure)			●
	Check brake cables for damage			●
	Check/function adjust smooth operation, free travel of hand levers		●	●
	Check screws of brake system for a tight fit		●	●
Chassis	Check suspension strut and fork for leaks and a proper function			●
	Check swinging-fork pivot			●
	Check/adjust steering-head bearing			●
	Check all chassis screws for a tight fit (fork plates, axle nuts, swinging-fork pivot, suspension strut)			●
Wheels	Check spoke tension and rim joint		●	●
	Check tire condition and inflation pressure			●
	Check chain, chain joint, chain wheels, chain wheel guides for wear, a tight fit, and tension		●	●
	Lubricate chain		●	●
	Check wheel bearings for play		●	●

PERIODIC MAINTENANCE »

ADDITIONAL SERVICE WORK TO BE PERFORMED UNDER A SEPARATE ORDER.			
	every 20 hours	every 40 hours	once a year
Check the reed-type intake valve for wear	•	•	
Check the clutch shoes for wear	•	•	
Check the length of the clutch springs	•	•	
Check the clutch drum for wear	•	•	
Check the cylinder and piston for wear	•	•	
Check the oil pump (only separate lubrication)	•	•	
Check the eccentricity of the crankshaft journal	•	•	
Check the radial clearance of the conrod bearings	•		
Check the radial clearance of the piston pin main bearing	•		
Check the crankshaft main bearing for wear	•		
Replace the crankshaft bearings and conrod bearings		•	
Check the entire transmission including bearings for wear		•	
Drain and clean the carburetor's float chamber			•
Perform complete fork maintenance			•
Clean and lubricate the swinging-arm bearing			•
Clean and lubricate the steering-head bearing and sealing elements			•
Change brake fluid (50 Senior Adventure)			•

Maintenance work done by KTM authorized workshops is not a substitute for care and checks done by the rider!

Note: If the inspection establishes that permissible tolerances are exceeded, the respective components must be replaced.

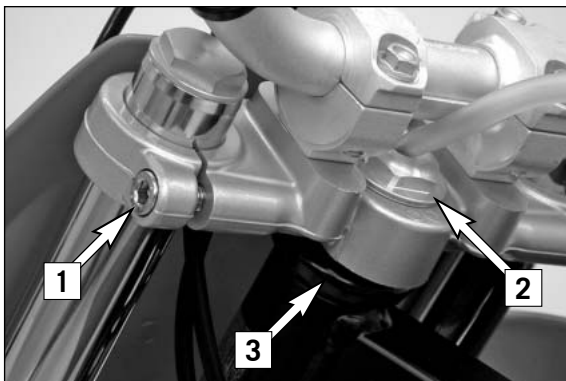
VITAL CHECKS AND CARE PROCEDURES TO BE CONDUCTED BY THE OWNER OR THE MECHANIC				
	before each start	after every cleaning	for cross country use	once a year
Check transmission oil level	•			
Check brake fluid level (50 Senior Adventure)	•			
Check brake pads for wear	•			
Check brake performance	•	•		
Lubricate and adjust actuating cables and nipples		•		
Remove and clean dust sleeves of telescopic fork at regular intervals			•	
Clean and lubricate chain, check tension and readjust it if necessary		•	•	
Clean air filter and filter box			•	
Check tire inflation pressure and wear	•			
Check fuel line for leaks	•			
Drain and clean float chamber		•		
Check oil lines for cracks or kinks (for separate lubrication only)	•			
Verify smooth operation of all controls	•			
Treat exposed metal components (except for the brake and exhaust systems) with wax-based anti-corrosion agents		•		
Check all screws, nuts, and hose clamps for their tight fit at regular intervals				•

⚠ WARNING

Maintenance work and adjustments marked with an asterisk (*) must be performed by an expert. To protect your youngster, always have such work performed by a specialized KTM dealer where your motorcycle will be optimally serviced by appropriately qualified, skilled staff.

! CAUTION

- When cleaning the motorcycle, do not use a high pressure cleaning unit if possible, otherwise water will penetrate the bearings, carburetor, electric connectors, Drum brakes, etc.
- Before cleaning with water, plug the exhaust pipe to prevent water ingress.
- When transporting your motorcycle, secure it with elastic straps or other mechanical devices in an upright position. Be sure that the fuel tap is closed. If the motorcycle topples over, fuel can flow out of the carburetor or fuel tank.
- Do not use toothed washers or spring rings with the engine fastening screws, as these work into the frame parts and keep working loose. Instead, use self-locking nuts.
- Let your motorcycle cool down before beginning any maintenance work in order to avoid getting burned.
- Dispose of oils, fatty matters, filters, fuels, washing detergents etc. properly.
- Under no circumstances may used oil be disposed of in the sewage system or in the open countryside. 1 liter of used oil contaminates 1,000,000 liters of water.



Checking and adjusting the steering head bearing *

The steering head bearing should be checked regularly for play. For this purpose, jack up the motorcycle by the frame so that the front wheel is in the air. Now try to move the fork forward and backward. There should be no clearance. For readjustment, release the two clamp screws [1] of the top triple clamp and the counternut [2]. Turn the adjusting nut [3] until almost no play is left. Do not tighten the adjusting nut! Tightening the adjusting nut can damage the bearings! Keep in mind that tightening the counternut [2] reduces the play of the bearing. Slightly tap the top triple clamp with a rubber hammer to prevent jamming. Then tighten the 2 clamp screws with 25 Nm.

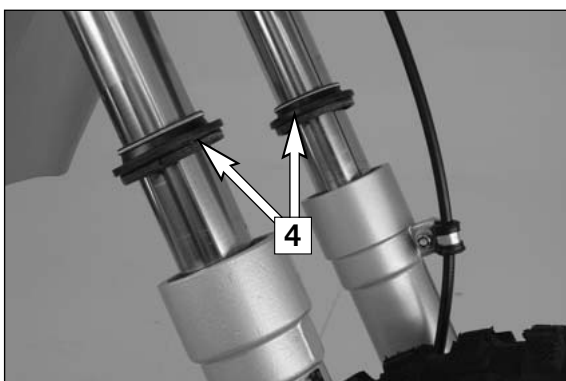
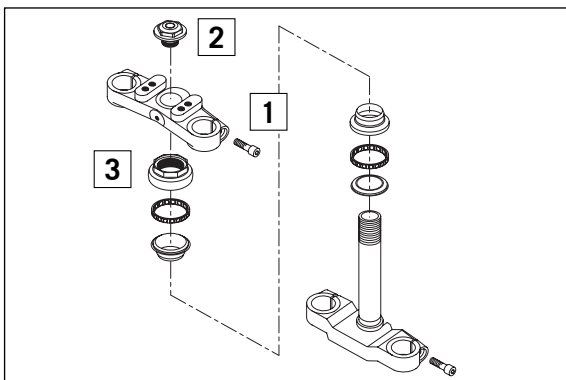
⚠ WARNING

If the steering head bearing is not adjusted to be free of clearance, the motorcycle will exhibit unsteady driving characteristics and can get out of control.

! CAUTION

- The handlebar must move easily. Otherwise the bearings will be damaged.
- If you drive with play in the steering head bearing for longer periods, the bearings and subsequently the bearing seats in the frame will be destroyed.

At least once a year, the steering head bearings should be smeared with water-proof grease. (Motorex Long Term 2000)

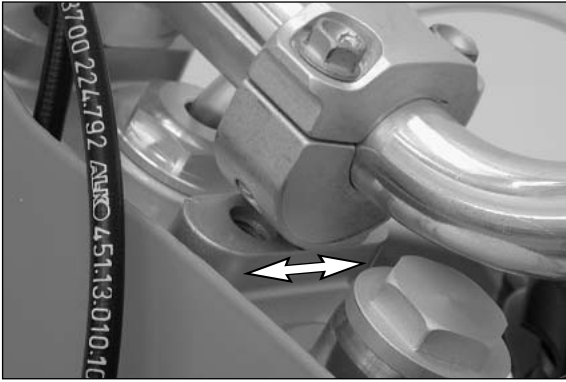


Cleaning the dust scrabbers of the telescopic fork

The dust scrabbers [4] should be cleaned on a regular basis. For this purpose, use a screwdriver to lift the dust scrabbers out of the slider tubes, clean them thoroughly with compressed air, spray the fork tubes and dust scrabbers Universal oil spray (Motorex Joker 440) or engine oil and press the scrabbers back into the slider tubes.

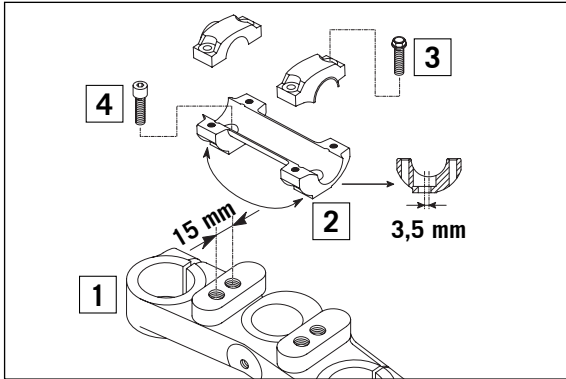
⚠ WARNING

No oil may reach the front tire or the brake disks since this would considerably reduce the tire's road grip and the braking effect of the front brake.



How to change the handlebar position

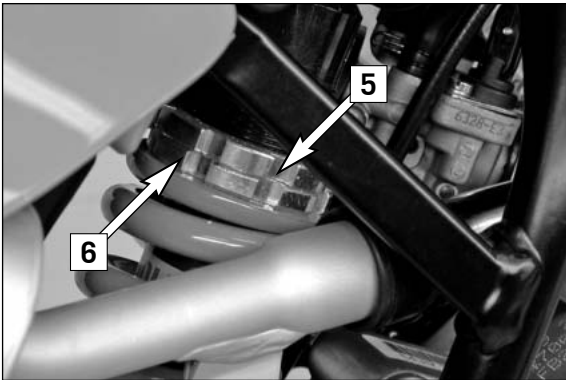
The handlebar position can be readjusted by 22 mm (0.9 in). The upper triple clamp [1] includes 2 bores arranged at a distance of 15 mm (0.6 in) from one another. The bores at the handlebar support [2] are offset from the center by 3.5 mm (0.13 in). Accordingly, you can mount the handlebar in 4 different positions.



For this purpose, remove screws [3] of the handlebar clamps and screws [4] of the handlebar support. Position handlebar support, and tighten screws [4] to 40 Nm. Mount handlebar and handlebar clamps, and tighten screws [3] to 20 Nm. The gap between the handlebar support and handlebar clamps should be the same size in the front and in the rear.

⚠ WARNING

The screws [4] must be secured with Loctite 243.



Changing spring preloading of the shock absorber

This is easily done.

NOTE: Before changing the spring preload note down the basic setting, e.g. how many threads are visible above the adjusting ring.

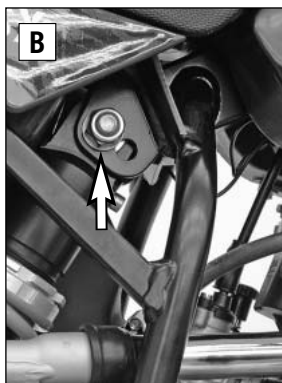
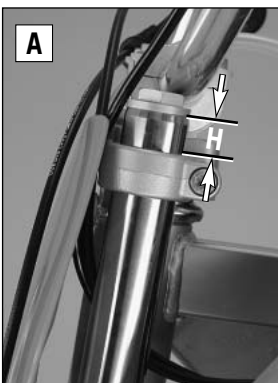
Remove the right side cover.

Loosen the locking ring [5] with the hook spanner. Change the spring preload with the adjusting ring [6] and re-tighten the locking ring [5].

BASIC SETTING – SPRING PRELOAD:

50 Mini Adventure 8 mm (0.32 in)

50 Senior Adventure 12 mm (0.48 in)



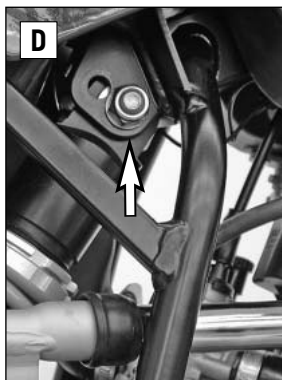
Changing the seat height

The seats on some mini models can easily be raised by 25 mm (1 in). This allows you to adjust the seat as your child grows.

Figures A and B show the fork and shock absorber positions for a low seat position. The fork tubes extend approx. 17 mm (0.7 in) (H) above the top triple clamp. The shock absorber is attached to the upper hole in the frame. Tighten the clamp screws on the fork stabilizers to 25 Nm (top) and 10 Nm (bottom), the bold on the shock absorber to 45 Nm.

Figures A and B: low seat position

Figures C and D: high seat position

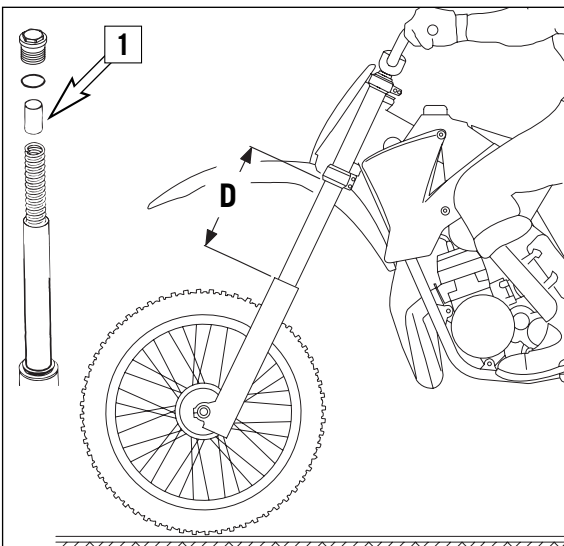
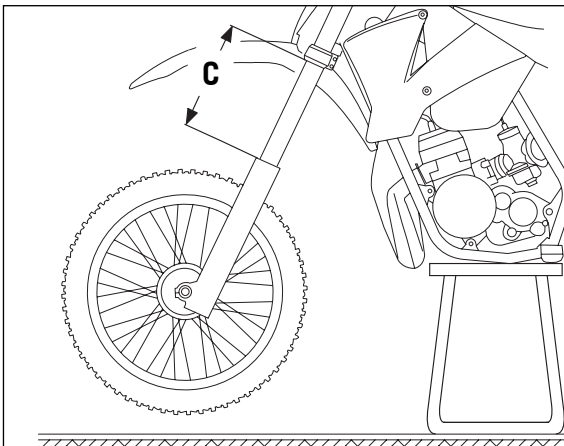
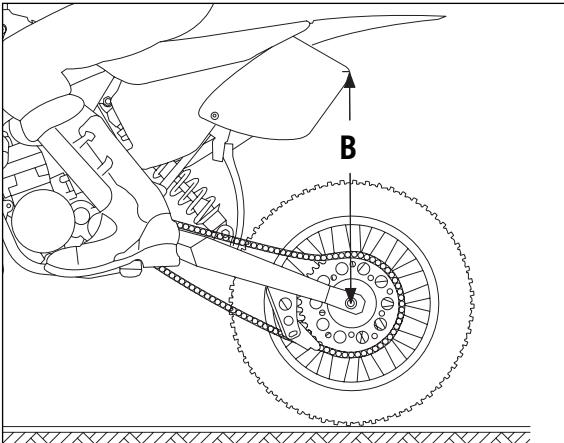
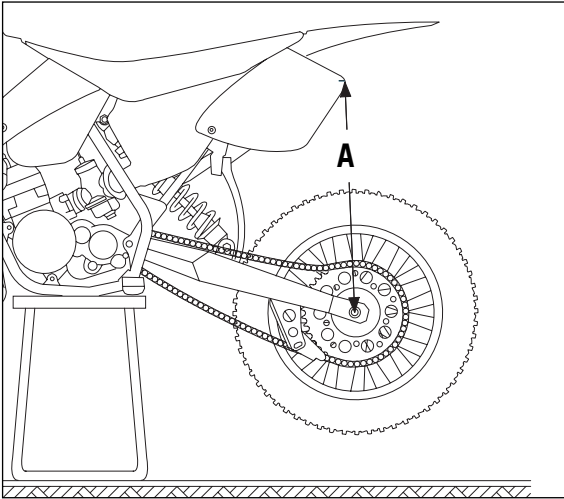


Figures C and D show the fork and shock absorber positions for a high seat position. Fork tubes are flush with top of top triple clamp. (Bold cap (Aluminium) protrudes from the top of the top triple clamp)

The shock absorber is attached to the lower hole in the frame. Tighten the clamp screws on the triple clamp to 25 Nm (top) and 10 Nm (bottom), the bold on the shock absorber to 45 Nm.

⚠ WARNING

The fork tubes may not be lowered any further than as described above, otherwise the clamping on the top triple clamp will no longer be adequate.



Basic suspension setup for the weight of the driver (50 Senior Adventure)

To achieve maximum handling performance and to prevent the telescopic fork and shock absorber from being damaged, the basic setup of the suspension components must be suitable for your child's weight. At delivery, KTM's mini motorcycles are set to accommodate a driver weighing 25 - 30 kg (wearing full protective clothing). If your child's weight exceeds or falls short of this range, you will need to adjust the spring preload for the telescopic fork and shock absorber accordingly.

To adjust, check the sag of the shock absorber and telescopic fork. The motorcycle should be filled up and your child should be wearing full protective clothing.

To determine the sag of the shock absorber

- Jack up the motorcycle until the rear wheel no longer touches the ground.
- Measure the vertical distance between the rear wheel axle and a fixed point (e.g. a mark on the side cover) and write it down as dimension A.
- Place the motorcycle on the ground again.
- Have your child sit on the motorcycle in a normal seating position (feet on the footrests) wearing full protective clothing and bounce up and down a few times to allow the rear wheel suspension to become level.
- Holding your child and the bike, have another person measure the distance between the same two points with the load on the motorcycle to establish dimension B.
- The sag is the difference between dimensions A and B.

EXAMPLE:

Motorcycle jacked up (dimension A) 330 mm
Motorcycle on ground with driver seated (dimension B) – 285 mm
 Sag 45 mm

50 Senior Adventure shock absorber sag 50 mm (± 5 mm)

If the sag is lower, the spring preload of the shock absorber must be reduced, if the sag is higher, the spring preload must be increased (see Changing spring preloading of the shock absorber).

To determine the sag of the telescopic fork (50 Senior Adventure)

- Jack up the motorcycle until the rear wheel no longer touches the ground.
- Measure the distance between the upper edge of the slider tube and the triple clamp and write it down as dimension C.
- Have your child sit on the motorcycle in a normal seating position (feet on the footrests) wearing full protective clothing, and bounce up and down a few times to allow the telescopic fork to become level.
- Holding your child and the bike, have another person measure the distance between the same two points with the load on the motorcycle to establish dimension D.
- The sag is the difference between dimensions C and D.

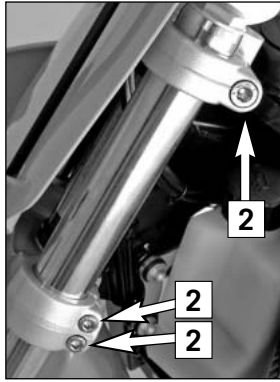
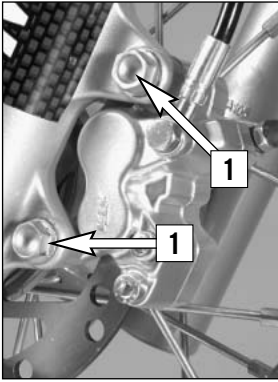
EXAMPLE:

Motorcycle jacked up (dimension C) 200 mm
Motorcycle on ground with driver seated (dimension D) – 160 mm
 Sag 40 mm

50 Senior Adventure telescopic fork sag 40 mm (± 5 mm)

If the sag is lower, the spring preload of the telescopic fork must be reduced, if the sag is higher, the spring preload must be increased.

The preload on the fork spring is determined by the length of preload spacer [1]. If an adjustment is necessary, demount the fork legs, remove the plugs and shorten the pretensioning sleeves or replace with longer ones (see Maintenance of telescopic fork). Harder fork springs are also available for both models (see spare parts catalog).



Telescopic fork maintenance (50 Senior Adventure) *

The telescopic fork must be serviced at least once a year.

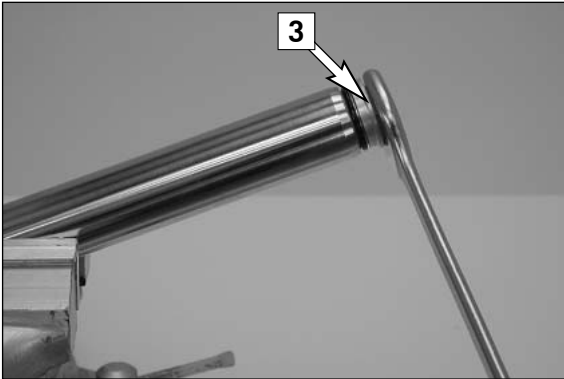
To service the fork, proceed as follows:

Prop up the motorcycle under the frame to take the load off the front wheel. Disassemble the front wheel, remove screw [1] from the brake caliper and unscrew holding clamp. Measure the projection of the fork legs at the upper fork stabilizer and make a note of the measurement.

Loosen the clamping screws [2] on the fork stabilizers and pull the fork legs down out of the fork stabilizers.

! CAUTION

- Do not operate the hand brake when the front wheel has been dismounted.
- Make sure the brake disc is always on top when you lay down the wheel, otherwise the brake disc can be damaged.



Clamp the fork leg into a vise (use protective jaws) and remove the plugs [3]. Take the preload spacer and the spring out of the fork tube.

Remove screws [4] at the underside of the slider tubes and pull the fork tubes out of the slider tubes.

Remove the dust scrabbers [5].



Thoroughly clean all parts and check for wear.

Generously lubricate seals and springs and reassemble the telescopic fork.

Tighten the screws on the bottom of the sliding tubes to 30 Nm.

Fill in fork oil and assemble the fork (see below). Degrease the screws on the brake caliper and apply Loctite 243. Mount the brake caliper and tighten to 20 Nm. Mount brake line and holding clamp.

Insert fork legs in the fork stabilizers (projection as previously noted) and tighten clamping screws to 25 Nm (top) and 10 Nm (bottom).

Mount front wheel (see chapter: mounting the front wheel).

⚠ WARNING

The screws [1] must be secured with Loctite 243.



Changing the telescopic fork oil (50 Senior Adventure) *

Remove front wheel and fork legs (see above).

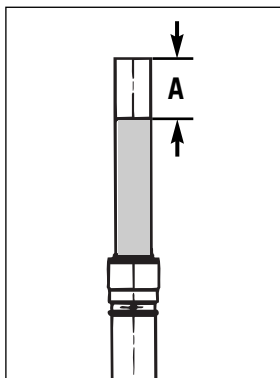
Remove plugs, preload spacers and springs.

Drain the fork oil into an appropriate container.

Clean the dust scrabbers.

⚠ WARNING

- It is very important to keep the brake disk free from oil and fatty matters. Otherwise, the braking effect would be strongly reduced.
- After working on the brake system, always operate the hand brake lever to apply the brake shoes to the brake disk and have a point of pressure.



Pour 170 cm³ SAE 7.5 fork oil into each fork tube.

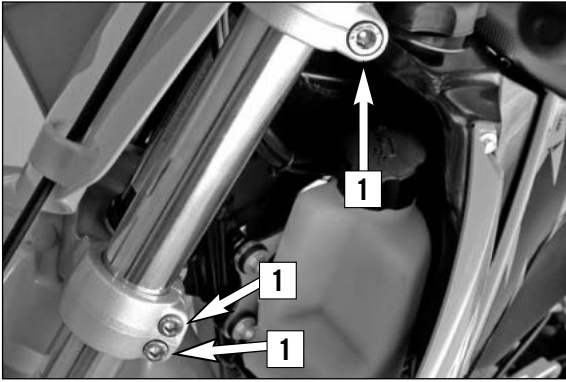
Slide the fork tube all the way into the slider tube.

Adjust the air-chamber length A to 110 mm (4.5 in) by extracting or adding fork oil.

Insert springs and pretensioning sleeves into the fork tube.

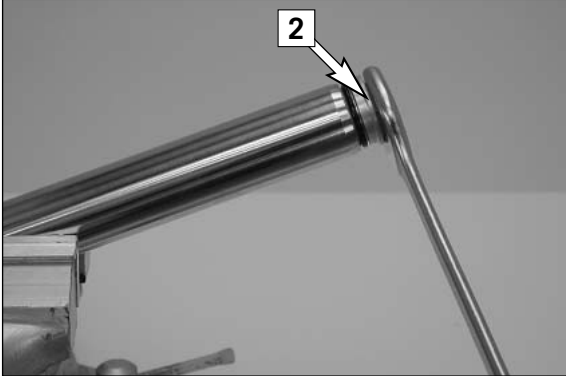
Check O-rings, grease and mount plugs.

Mount the fork legs, front wheel and brake caliper (see above).



Telescopic fork maintenance (50 Mini Adventure)*

The telescopic fork must be serviced at least once a year:
 Jack up the motorcycle by the frame to take the weight off the front wheel.
 Remove the front wheel and the brake cable guide.
 Measure the projection of the fork legs at the upper fork stabilizer and make a note of the measurement.
 Release the clamp screws [1] at the triple clamps and pull the fork legs downwards out of the triple clamps.



Clamp the fork leg into a vise (use protective jaws) and remove the plugs [2].
 Take the preload spacer and the spring out of the fork tube.
 Remove screws [3] at the underside of the slider tubes and pull the fork tubes out of the slider tubes.
 Remove the dust scrubbers [4].

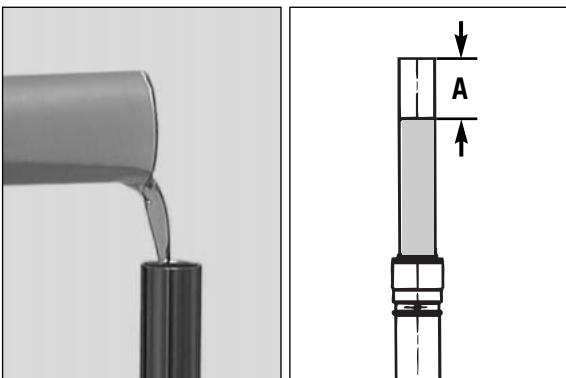


Thoroughly clean all parts and check for wear.
 Grease gaskets and springs and reassemble the telescopic fork.
 Tighten the screws at the underside of the slider tubes to 30 Nm.
 Fill in fork oil and assemble the fork (see below).
 Insert the fork legs into the triple clamps (projection as previously noted) and tighten the clamp screws to 25 Nm (top) and 10 Nm (bottom).
 Mount the front wheel (see chapter: mounting the front wheel).

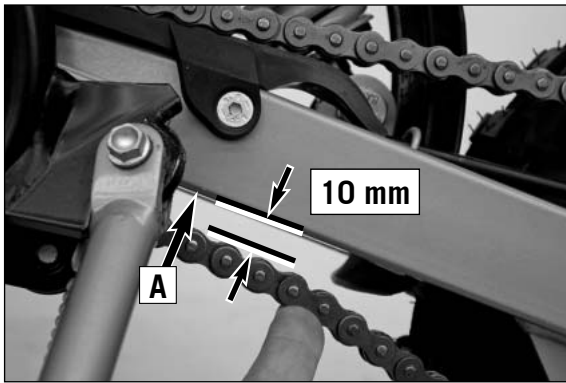


Changing the telescopic fork oil (50 Mini Adventure) *

Remove front wheel and fork legs (see above).
 Remove plugs, preload spacers and springs.
 Drain the fork oil into an appropriate container.
 Clean the dust scrubbers.



Pour 170 cm³ SAE 7.5 fork oil into each fork tube.
 Slide the fork tube all the way into the slider tube.
 Adjust the air-chamber length A to 110 mm (4.5 in) by extracting or adding fork oil.
 Insert springs and pretensioning sleeves into the fork tube.
 Check O-rings, grease and mount plugs.
 Mount fork legs and front wheel (see above).
 Mount brake control cable and brake cable guide.
 Adjust the cable control on the front brake.

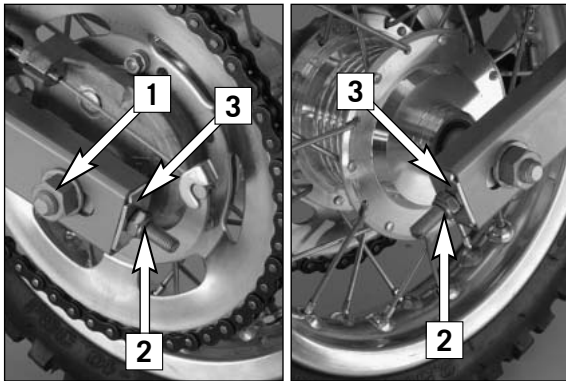


Check chain tension

Park the motorcycle on the side stand and switch off the engine. Chain tension has to be checked close to the lower rear shock mounting A. When pushing the chain upwards, the distance to the swingarm has to be 10 mm (0.4 in). If necessary, correct chain tension.

⚠ WARNING

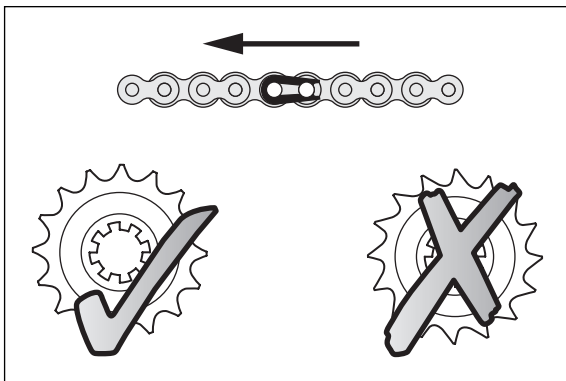
- If chain tension is too great, parts within the secondary transmission (chain, chain wheels, gear box and rear wheel bearings) will be subjected to unnecessary stress, resulting in premature wear and even chain breakage.
- Too much slack in the chain, on the other hand, can result in the chain jumping off the chain wheels. If this happens, the chain could also block the rear wheel or damage the engine.
- In either case the operator is likely to lose control of the motorcycle.
- Be careful not to get your finger caught between the chain and the rear sprocket or other components.



Correct chain tension

Release the hexagon nut of the wheel spindle [1] and turn the left and the right hexagon nut [2] equally far.

Before tightening the hexagon nut of the wheel spindle to 40 Nm, ensure that the supporting plates [3] are resting against the swing arm. Additionally, check that the rear wheel is aligned with the front wheel.



Chain maintenance

For long chain life, good maintenance is very important. Chains without O-rings should be cleaned in fireproof solvent regularly and afterwards treated with hot grease or chain spray (Motorex Chainlube 622).

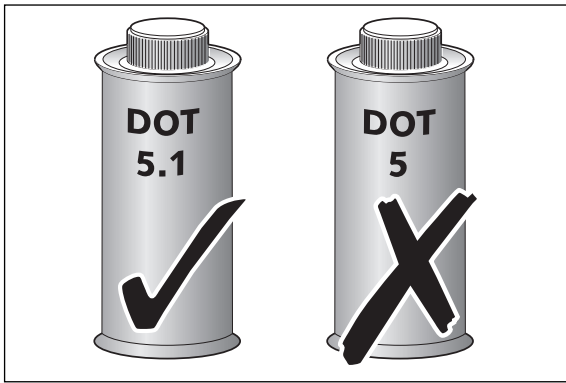
⚠ WARNING

Keep the rear wheel free of grease! Grease on the rear wheel will significantly reduce the grip of the rear tire and the motorcycle could easily get out of control.

! CAUTION

When mounting the chain masterlink clip, the closed side of the masterlink clip must point in running direction.

Also check sprockets and chain guides for wear, and replace if necessary.



General information about KTM disc brakes

BRAKE FLUID RESERVOIRS:

The brake fluid reservoirs for the front brake is designed such that it does not need to be refilled, even if the brake shoes are worn. If the brake fluid level drops below the minimum level either the brake system has a leak or the brake pads are completely worn.

In this case, consult an authorized KTM dealer immediately.

BRAKE FLUID:

KTM fills the brake system with "Motorex Brake Fluid DOT 5.1", one of the best brake fluids currently available. We recommend that you continue to use it. DOT 5.1 brake fluid is based on glycol ether and of an amber color. If you do not have any DOT 5.1 for refilling, you may use DOT 4 brake fluid. DOT 4 shown on the lid means minimum standard. However, you should replace it as soon as possible by DOT 5.1.

⚠ WARNING

Have the brake fluid changed at least once annually. If you wash your motorcycle often, the brake fluid should be changed even more frequently. Brake fluid tends to absorb water. Therefore, vapor pockets may form in "old" brake fluids even at low temperatures, causing the brake system to fail.

BRAKE DISC:

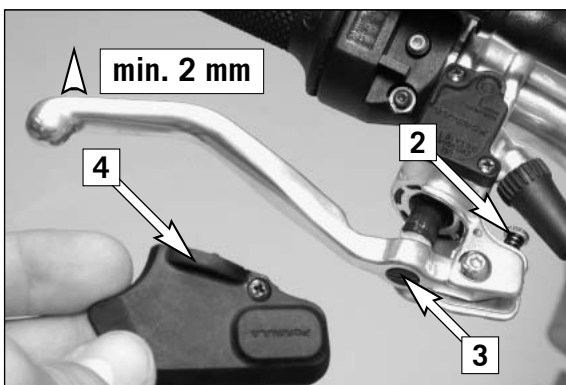
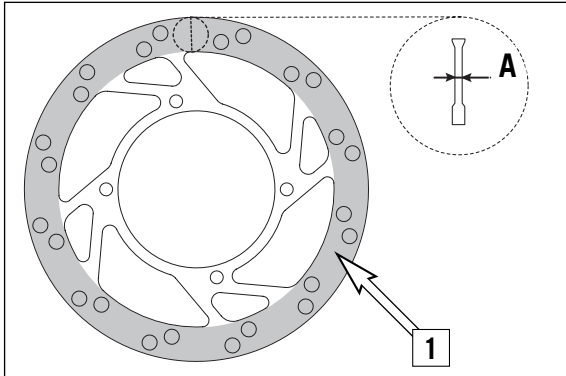
Due to wear, the thickness of the brake disc in the area of the contact face [1] of the brake pads decreases. The brake disk must be at least 2.50 mm thick at the thinnest point [A]. Check the thickness of the brake disk at several points.

⚠ WARNING

- A brake disk worn down to less than 2.50 mm is a safety risk. Have the brake disk replaced as soon as it reaches the service limit.
- Have any repairs on the brake system be performed by a KTM dealer.

BRAKE CALIPERS:

Secure the screws on the brake caliper with Loctite 243 and tighten to a torque of 20 Nm.

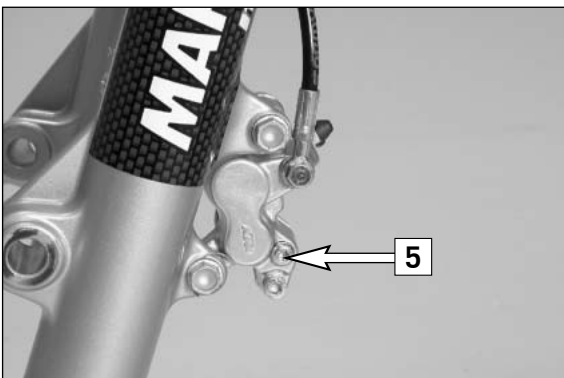
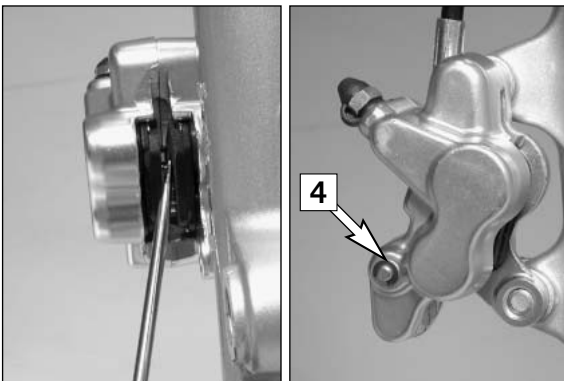
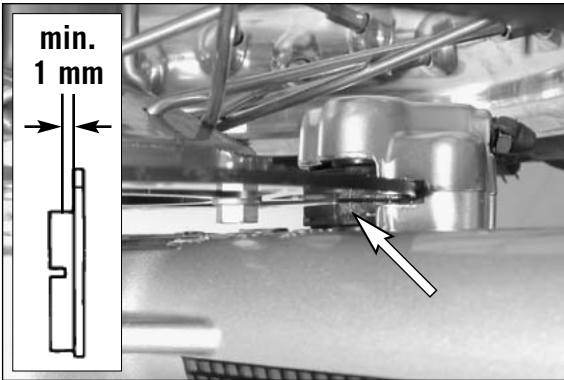
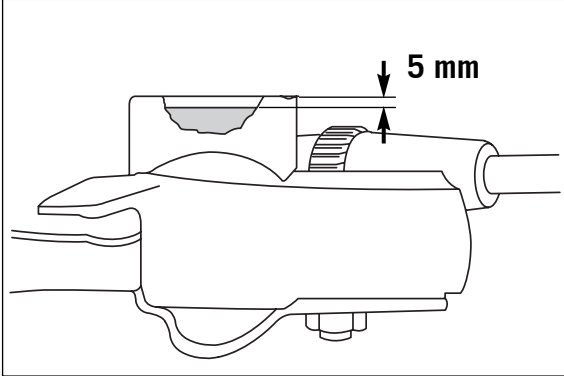
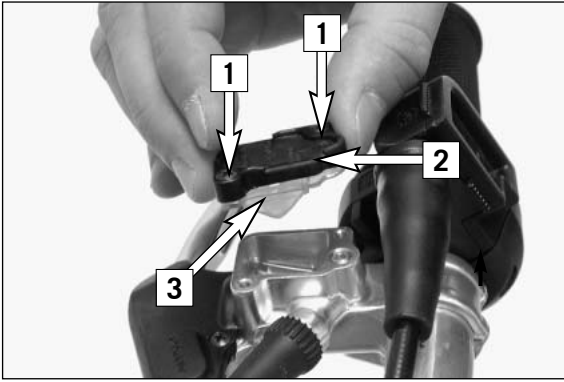


Setting the basic position and play of the hand brake lever (50 Senior Adventure) *

You can adjust the basic position of the hand brake lever to fit your child's hand by turning stop screw [2]. Afterwards, be sure to adjust the play of the hand brake lever to 2 mm (0.08 in) with the adjusting screw [3]. To adjust, remove covering cap [4]. Replace the covering cap after making the adjustment.

! CAUTION

At the hand brake lever, free travel must at least be 2 mm (0.08 in). Only then may the piston in the hand brake cylinder be moved (to be recognized by the greater resistance of the hand brake lever). If this free travel is not provided, pressure will build up in the braking system, and the front-wheel brake may fail due to overheating.



Checking/refilling the front brake fluid level (50 Senior Adventure) *

The brake fluid reservoir is combined with the hand brake cylinder on the handlebar. To check the brake fluid level, press the brake pistons back into the basic position. Move the hand brake cylinder in a horizontal position, remove the screws [1] and the cover [2] with the diaphragm [3]. The brake fluid level should be 5 mm below the upper edge of the reservoir (see drawing), otherwise add DOT 5.1 brake fluid (e.g. Motorex Brake Fluid DOT 5.1) up to 5 mm below the upper edge of the reservoir.

Mount the diaphragm, the cover and the screws and actuate the hand brake lever until you feel the point of pressure again. Wipe off any overflowing or spilled brake fluid with water.

⚠ WARNING

- Actuate the hand brake lever until you feel the point of pressure again.
- Never use DOT 5 brake fluid! It is based on silicone oil and of a purple color. Seals and brake hoses must be especially adapted to it.
- Store brake fluid out of reach of children.
- Brake fluid can cause skin irritation. Avoid contact with skin and eyes. If you get brake fluid in your eyes, rinse with plenty of water and consult a doctor.

! CAUTION

- Don't let brake fluid get in contact with paint, it is an effective paint remover.
- Use only clean brake fluid taken from a tightly sealed container.

Checking front brake pads (50 Senior Adventure)

Inspect the brake pads from in front of the vehicle. The linings must be at least 1 mm (0.04 in) thick.

⚠ WARNING

At their most worn point brake pad linings should not be thinner than 1 mm (0.04 in), otherwise they could lead to brake failure. For your own safety don't put off having your brake pads changed.

! CAUTION

If the brake pads are replaced too late so that the lining is partly or entirely worn, the steel components of the brake pad will rub against the brake disc, thereby impairing the braking effect and destroying the brake disc.

Replacing the front brake pads (50 Senior Adventure) *

Remove the front wheel (see front wheel chapter).

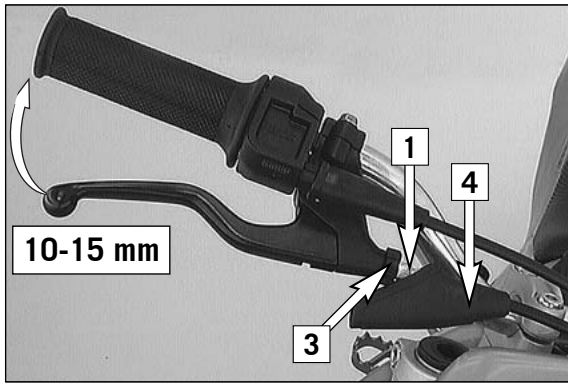
Press brake shoes apart with a suitable screwdriver to put the brake pistons in their basic position.

Remove the lock washer [4] from the screw as well as fixing screw [5] and take the brake shoes out of the brake caliper. Clean brake caliper thoroughly with compressed air.

Mount the left brake shoe and fix with screw. Mount the right brake shoe and tighten the screw to 4 Nm. Mount the lock washer. Align brake shoes, mount front wheel (see chapter: Mounting the front wheel).

⚠ WARNING

- It is very important to keep the brake disc free from oil and fatty matters. Otherwise, the braking effect would be strongly reduced.
- After assembly, check if circlips have been fitted correctly.
- Do not unscrew any other screws on the brake caliper or you will have to bleed the brake system.
- After working on the brake system always operate the hand brake lever to apply the brake pads to the brake disc and create a point of pressure.



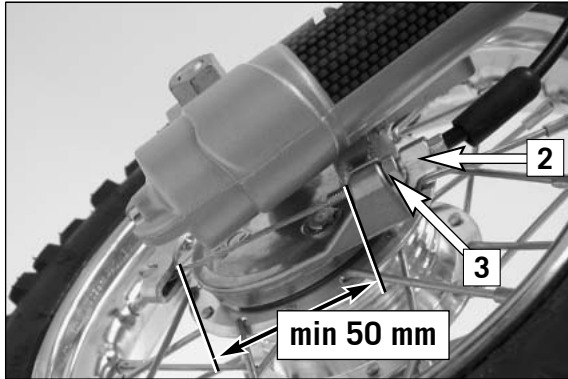
Adjusting the front wheel brake cable (50 Mini Adventure)

The hand brake lever should travel between 10 and 15 mm (0.4-0.6 in) before the front wheel is actually slowed down.

To adjust the brake control cable, use either the adjusting screw [1] at the hand brake lever or the adjusting screw [2] at the brake backing plate. Before commencing to adjust the cable, always release the counternut [3]. Afterwards, the counternut must be retightened. Properly remount the rubber protection piece [4] pulled back earlier.

! CAUTION

After adjusting the cable, always check if the wheel turns smoothly.

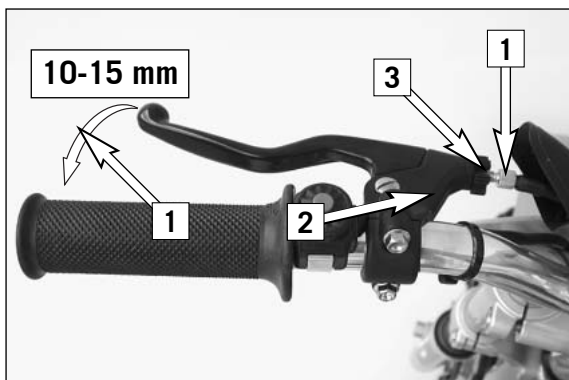


Checking the front brake linings for wear (50 Mini Adventure)

The brake linings must be replaced when the distance between the hub brake lever and the cable support, measured with the brake lever squeezed, is less than 50 mm (2 in) (see illustration).

! CAUTION

If the brake linings are replaced too late, i.e. when the lining is partly or fully worn away, the metal shoes will rub against the brake drum, thus reducing the braking effect and destroying the brake drum.



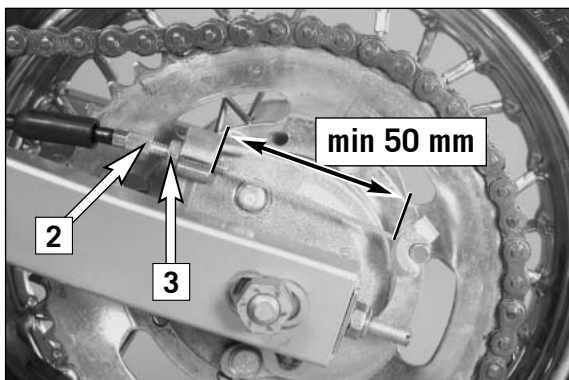
Adjusting the rear wheel brake cable

The hand brake lever should travel between 10 and 15 mm (0.4-0.6 in) before the rear wheel is actually slowed down.

To adjust the brake control cable, use either the adjusting screw [1] at the hand brake lever or the adjusting screw [2] at the brake backing plate. Before commencing to adjust the cable, always release the counternut [3]. Afterwards, the counternut must be retightened. Regarding the rubber protection piece, proceed as for the front-wheel brake.

! CAUTION

After adjusting the cable, always check if the wheel turns smoothly.

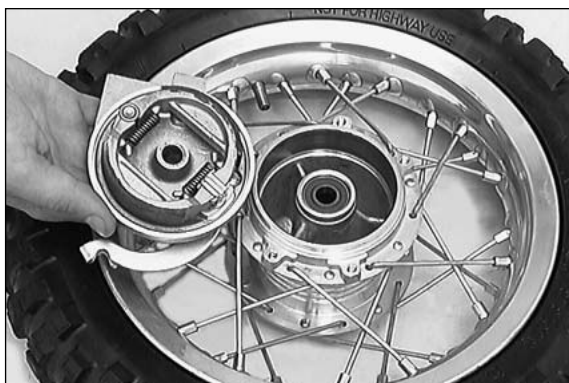


Checking the rear brake linings for wear

The brake linings must be replaced when the distance between the hub brake lever and the cable support, measured with the brake lever squeezed, is less than 50 mm (2 in) (see illustration).

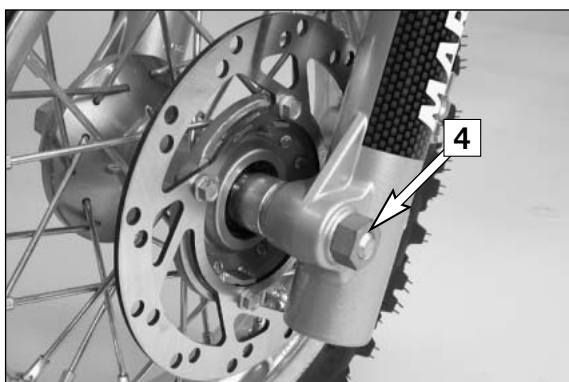
! CAUTION

If the brake linings are replaced too late, i.e. when the lining is partly or fully worn away, the metal shoes will rub against the brake drum, thus reducing the braking effect and destroying the brake drum.



Drum brake maintenance

Drum brake maintenance is limited to occasional blowing out of brake drum and brake shoes. Brake drum and brake linings can be slightly roughened with an abrasive tape.



Removing and mounting the front wheel (50 Senior Adventure)

Jack the motorcycle up by the frame so that the front wheel is suspended above the ground.

Undo the hexagon nut [4] and remove it together with the washer.

Hold the front wheel and pull out the wheel spindle [5].

Carefully take the front wheel out of the fork.

! CAUTION

- Do not operate the hand brake when the front wheel has been dismantled.
- Make sure the brake disc is always on top when you lay down the wheel, otherwise the brake disc can be damaged.

Lift the front wheel into the fork and correctly position it

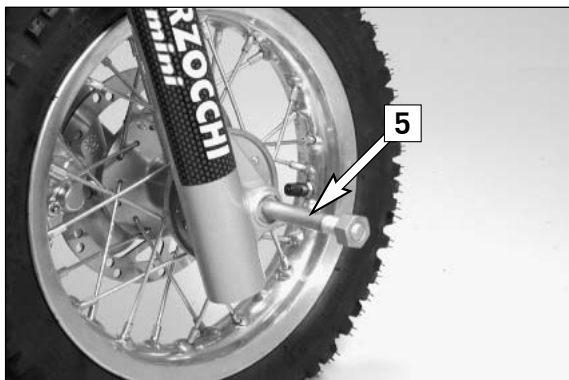
Mount the wheel spindle [5].

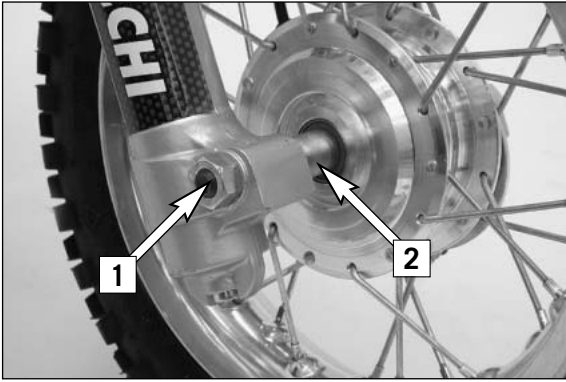
Mount the washer and the hexagon nut [4] and tighten 40 Nm.

Put the motorcycle back on the ground and operate the front wheel brake until the working point is reached.

⚠ WARNING

- If you don't happen to have a torque wrench at hand, make sure you have the tightening torque corrected by a KTM dealer as soon as possible. A loose axle may lead to an unstable driving behavior of your motorcycle.
- After mounting the front wheel, keep operating the hand brake until the pressure point returns.
- It is very important to keep the brake disk free from oil and fatty matters, otherwise the braking effects would be strongly reduced.

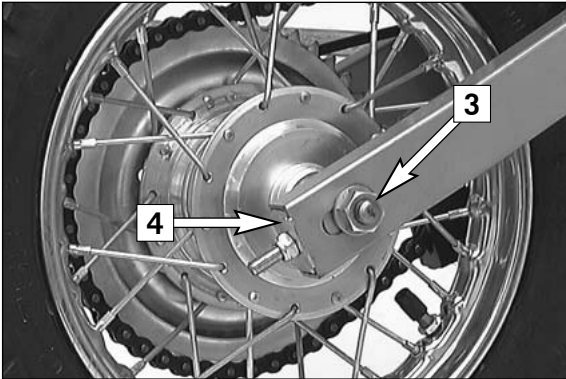




Removing and mounting the front wheel (50 Mini Adventure)

Jack up the motorcycle by the frame.
Remove the right hexagon nut of the wheel spindle [1] together with the washer.
Pull the wheel spindle halfway out and remove the spacer [2].
Now pull out the wheel spindle until the wheel is free but not so far that the brake backing plate comes off.
Turn both wheel and fork slider tube to the left and remove wheel.

To mount the wheel reverse the procedure described above.
Tighten the hexagon nut to 40 Nm.



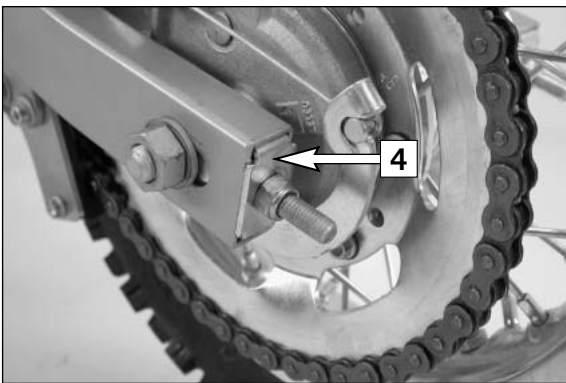
Removing and mounting the rear wheel

Prop up the motorcycle under the frame.
Remove the right hexagon nut of the wheel spindle [3] together with the washer.
Hold the rear wheel and remove the wheel spindle.
Move the rear wheel forwards, remove chain, lift the rear wheel out of the swinging fork and remove the brake anchor.

To mount the wheel reverse the procedure described above.
Always hook the brake backing plate into the swing arm support.
Before tightening the hexagon nut of the wheel spindle, ensure that the supporting plates [4] are resting against the swing arm. Additionally, check that the rear wheel is aligned with the front wheel.
Tighten the hexagon nut to 40 Nm.

⚠ WARNING

If you don't happen to have a torque wrench at hand, make sure you have the tightening torque corrected by a KTM dealer as soon as possible. A loose axle may lead to an unstable driving behavior of your motorcycle.



Tires, air pressure

Tire type, tire condition, and air pressure level affect the way your motorcycle rides, and they must therefore be checked whenever you are getting ready to go anywhere on your motorcycle.

- Tire size can be found in the technical specifications.
- Tire condition has to be checked every time you want to ride your motorcycle. Before leaving, check tires for punctures and nails or other sharp objects that might have become embedded in them.
- Regularly check the „cold“ tire pressure. Correct tire pressure (1.0 bar / 14 psi) guarantees optimum grip and maximum tire life.

⚠ WARNING

- Damaged tires must be replaced immediately to protect your youngster.
- Worn tires can have a negative effect on how the motorcycle performs, especially on wet surfaces
- Tire pressure below the normal level will lead to premature tire wear.

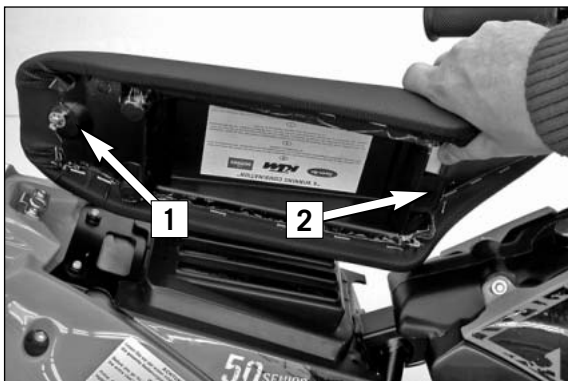


Checking spoke tension

The correct spoke tension is very important for the stability of the wheels and unbalanced and before long other spokes will have come loose. Check spoke tension, especially on a new motorcycle, in regular intervals. If necessary, have the spokes retightened and the wheel centered by a KTM dealer.

⚠ WARNING

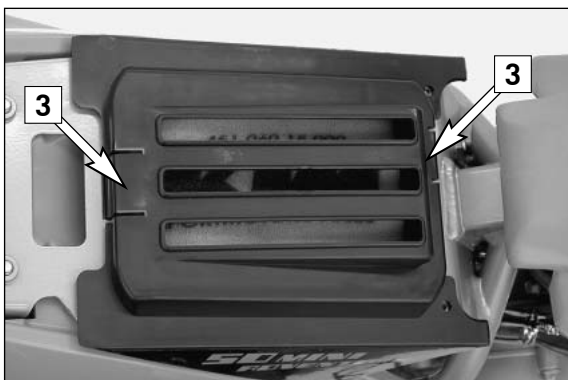
- Spokes can tear if you continue to ride with them loose. This may lead to an unstable handling of your motorcycle.
- Excessively tensioned spokes may rupture due to local overloading. The spokes must be tensioned to 3 Nm Senior Adventure/2,5 Nm Mini Adventure.



Removing the seat

The quick-release mechanism [1] allows removal of the seat without tools. Turn the quick-release device approximately 180° counter clockwise, lift the rear portion of the seat and pull the seat off backwards.

When mounting the seat ensure that the hook [2] engages at the tank.

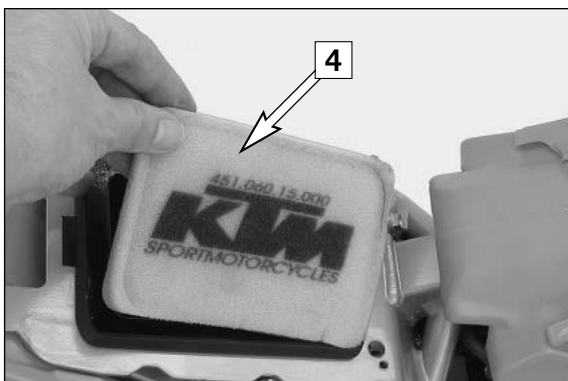


Cleaning the air filter *

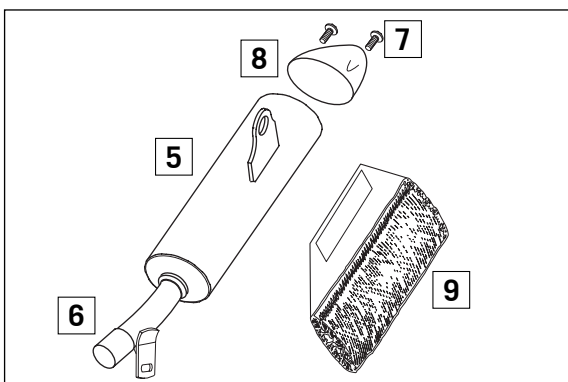
The air filter must be cleaned at intervals depending on the amount of dust accumulated. To clean the air filter, first remove the seat. Then press both retaining clips [3], remove the filter holder and the air filter [4]. The air filter consists of a foam rubber insert soaked with filter oil.

! CAUTION

- Do not clean the foam filter with fuel or petroleum since these will damage the foam. KTM recommends the products made by Motorex (Bio dirt remover and Liquid bio Power) for air filter maintenance.
- Never operate your motorcycle without an air filter. Otherwise, dust and dirt may get into the engine and lead to increased wear.
- The holder must retain the air filter throughout its entire circumference. If the filter has been mounted incorrectly, the engine will take in unfiltered air, thereby causing increased engine wear.



Thoroughly wash the foam filter in special cleaning fluid and allow it to dry well. Only press out the filter, do not wring it out under any circumstances. Oil the dry foam filter with a high-grade filter oil. Also clean the air filter box. Check carburetor collar for damage and that it is filled correctly. Insert the air filter in the opening and fasten it with the filter holder. Then mount the seat.



Exhaust system *

The silencer is filled with glass-fiber yarn for damping. When in use, the glass-fiber yarn becomes loose or coked with oil carbon. This can lead to a power loss and a reduction of the silencer damping. The glass-fiber yarn packing can be replaced in a few easy steps.

To replace, remove the silencer from the vehicle and mark the position of the outer tube [5] to the inner tube [6]. Remove screws [7] and the end cap [8]. Pull off the outer tube and remove the old glass-fiber yarn packing [9] from the inner tube. Thoroughly clean all parts.

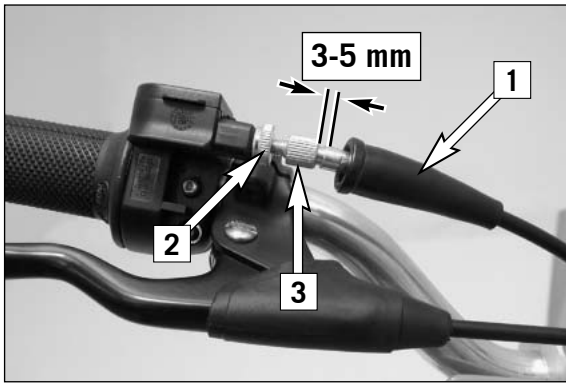
To assemble, mount a new glass-fiber yarn packing onto the inner tube (see illustration) and slide into the outer tube. Mount end cap and fix with screws [7]. Before tightening the screws, turn the outer tube until they match the positions you marked. Mount the silencer and check the exhaust system for tightness.

NOTE: Glass - fiber yarn packages are offered by your licensed KTM dealer.

⚠ WARNING

The exhaust system becomes very hot while the motorcycle is running. to avoid burns do not start work on the exhaust system until it has properly cooled down.

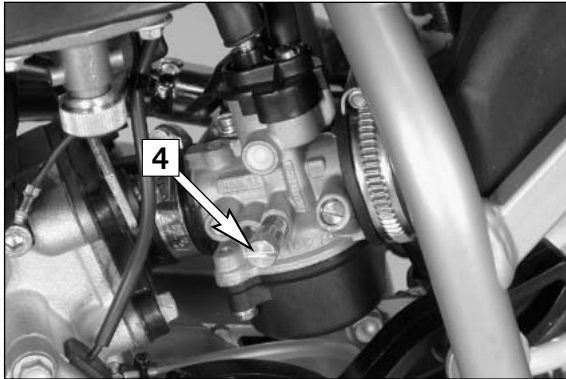




Adjusting the throttle cable *

There must always be a 3 to 5 mm (0.1 to 0.2 in) play in the throttle cable. To check this, move back the protective cover [1] on the throttle grip. You must be able to lift the outer covering of the cable 3-5 mm from the adjusting screw [3], until resistance is felt.

To adjust, loosen the counter nut [2] and turn the adjusting screw accordingly. Finally tighten counter nut and slide the protective cover back on.

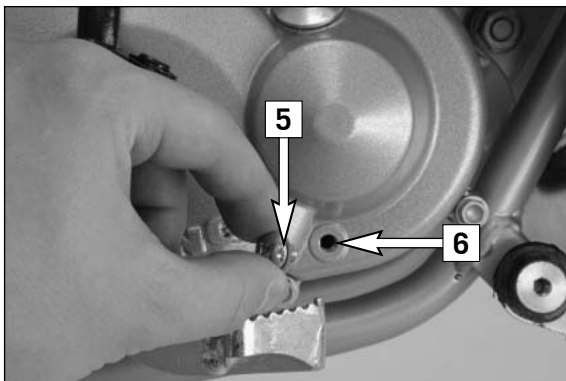


Adjusting the idle speed *

The idle speed can be adjusted with throttle stop screw [4].

Turning in clockwise direction will increase the idle speed.

Turning in counterclockwise direction will reduce the idle speed.

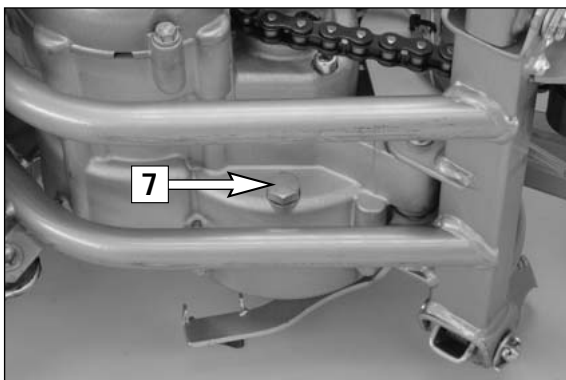


Checking the gear oil level

To check the gear oil level, first remove the plug [5]. With the motorcycle parked in an upright position, a small quantity of oil should flow out of the indicator opening [6]. If oil must be added, tilt the motorcycle and pour gear oil (Motorex ATF Super) into the bore.

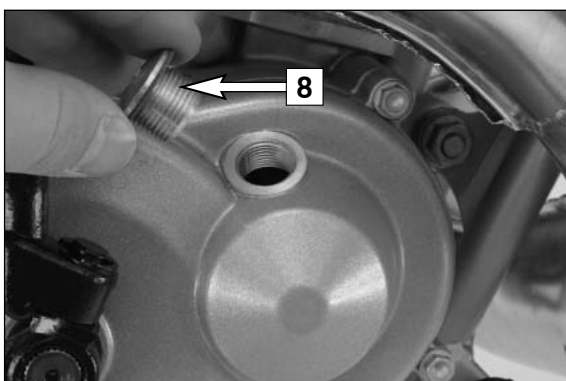
! CAUTION

Less oil or a poor oil quality lead to premature transmission wear. Therefore, only use branded products (Motorex ATF Super).



Changing gear oil *

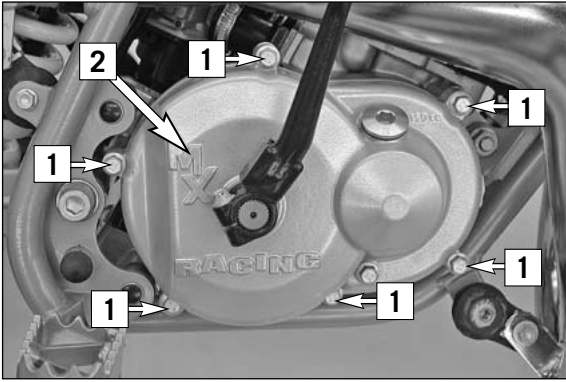
The engine must be warmed up before changing the gear oil. Park the motorcycle on a horizontal surface, remove the oil drain plug [7] and drain the used oil into an appropriate container. Clean the sealing surface, mount the oil drain plug together with the gasket and tighten to 15 Nm.



Remove stopper [8] and fill in 0.15-0.2 liters of automatic gear oil (Motorex ATF Super). Mount the stopper and check the engine for tightness.

! CAUTION

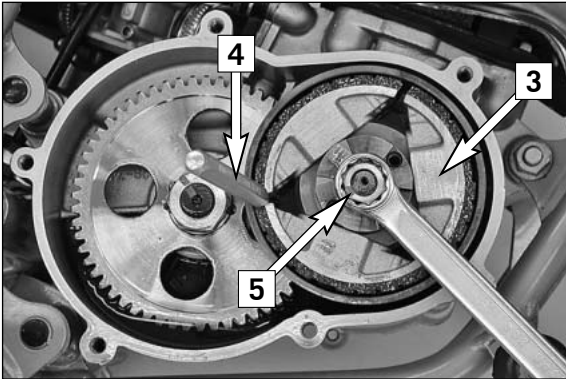
Less oil or a poor oil quality lead to premature transmission wear. Therefore, only use branded products (Motorex ATF Super).



Adjusting the centrifugal clutch *

A correctly adjusted centrifugal clutch will provide maximum engine performance and ease of driving and prevent the engine from overheating. Clutch wear can affect the clutch engagement speed.

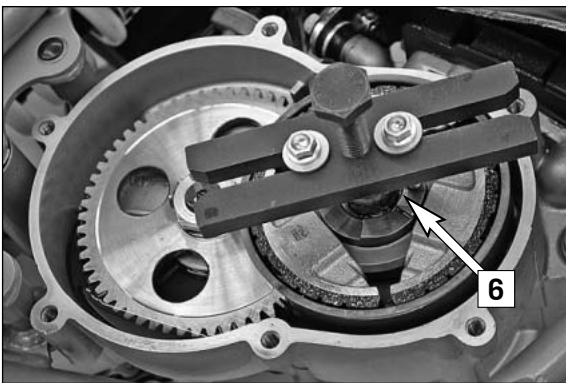
The clutch will slip for a longer period of time at higher clutch engagement speeds, generating more frictional heat and causing the engine to overheat. If the clutch engagement speed is too low, the engine will not reach the performance range. In both cases, the engine will not seem to have enough power. Check the clutch engagement speed every 20 hours and correct if necessary or have it corrected by an authorized KTM workshop.



To tune your clutch, lay the bike on the left side. To prevent oil from leaking from the transmission vent hose, run the hose upwards and fasten. Remove the screws [1] and the clutch cover [2] and discard the gasket. Block the centrifugal clutch [3] with a suitable driver [4].

NOTE: insert the driver through both holes in the primary drive's drum and gear wheel.

Loosen the nut [5] on the clutch and pull out the driver. Remove the nut and shim from the crankshaft.



Screw the extractor (special tool item no. 590.29.021.044) onto the clutch hub [6] with the M5x50 screws, hold the extractor and remove the centrifugal clutch from the crankshaft by screwing in the extractor screw. Completely remove the centrifugal clutch, bearings and spacing washers from the crankshaft.

Loosen the HH screws [7] and remove the clutch shoes [8] from the clutch hub [6]. Remove the HH screws and bushings [9], the clutch springs [10] and the disks [11] from the clutch shoes.

ADJUSTING THE CLUTCH ENGAGEMENT SPEED:

The disks [11] used to pretension the clutch springs are located between the clutch springs (minimum length 19.6 mm) and the clutch shoes. Pretensioning the clutch springs lets you adjust the clutch engagement speed. 0.5 mm more pretension will increase the engagement speed by approx. 500 rpm.

The clutch engagement speed is the speed at which the clutch begins to engage to make the motorcycle drive off. The 50 AC engine has a clutch engagement speed of 4000-4500 rpm.

NOTE: a tachometer (special tool item no. 451.29.075.000) to test the clutch engagement speed is available from your KTM dealer.

CORRECTING CLUTCH WEAR:

Check the clutch shoes for wear. If the surface is only slightly worn you can remount them again.

NOTE: The centrifugal clutch has an outer diameter of approx. 82.5 mm when new.

To correct slight wear to the surface, you can insert one of the pretensioning disks [11] from each clutch spring between the clutch hub and the clutch shoes – see illustration.

If only one disk is installed, you can go ahead and use it.

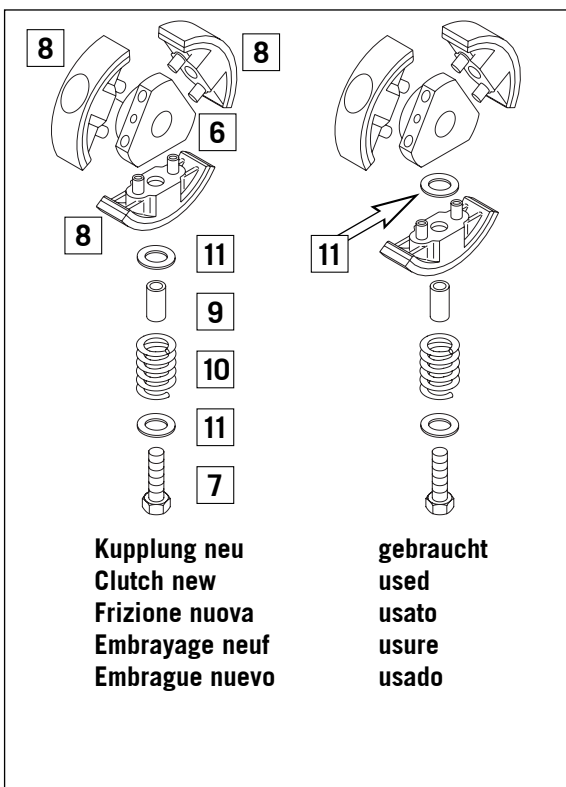
The inner diameter of the centrifugal clutch drum may not exceed 84.4 mm (new condition 84.0 mm).

Assemble in the reverse order.

Apply Loctite 243 to the HH screws [7] and tighten to 12 Nm.

Apply Loctite 243 to the M10x1.25 nut [5] on the crankshaft and tighten to 35 Nm. Mount a new gasket and position the clutch cover [2].

Screw on the clutch cover with 6 M6x25 screws [1] and tighten to 10 Nm. Move the transmission vent hose back in the original position.



TROUBLE SHOOTING »

If you let the specified maintenance work on your motorcycle be carried out, disturbances can hardly be expected. Should an error occur nevertheless, we advise you to use the trouble shooting chart in order to find the cause of error.

We would like to point out that many operations cannot be performed by oneself. In case of uncertainty, please contact a KTM-dealer.

TROUBLE	CAUSE	REMEDY
Engine fails to start	<p>Operating error</p> <p>The motorcycle has been out of operation for a longer period of time. Therefore old fuel has accumulated in the float chamber</p> <p>Fuel supply interrupted</p> <p>Electrode distance too large</p> <p>Plug fouled by oil, wet or bridged</p> <p>Ignition wire or spark plug connector damaged</p> <p>Kill button wire or short-circuit switch faulty</p> <p>Loose ignition cable connectors</p> <p>Spark too weak</p> <p>Water in the carburetor and jets blocked</p>	<p>Open fuel tap, replenish fuel, do not use choke</p> <p>The easily inflammable components of the new fuels evaporate during longer periods of standstill. When the motorcycle has been out of operation for more than a week, it is therefore recommended to drain the old fuel from the float chamber. The engine will immediately start off when the float chamber is filled with new fuel.</p> <p>Close fuel tap, loosen fuel hose at carburetor, lead into a basin and open fuel tap,</p> <ul style="list-style-type: none"> – if fuel leaks out, clean carburetor – if no fuel leaks out, check tank ventilation, i.e. clean fuel tap <p>Reduce electrode distance (0.60 mm)</p> <p>Clean spark plug or renew</p> <p>Dismount spark plug, connect ignition cable, hold to ground (blank place on engine) and actuate kickstarter, a strong spark must be produced at the spark plug</p> <ul style="list-style-type: none"> – If no spark is produced, loosen spark plug cap from ignition cable, hold about 5 mm from ground and actuate kickstarter – If a spark now occurs, replace spark plug cap – If no spark is produced, control ignition system <p>Disconnect black colored cable from short circuit button at ignition coil and check ignition spark. If the spark is O.K. repair defective part of cable or ignition switch</p> <p>Inspect cable connectors</p> <p>Examine ignition system</p> <p>Dismantle and clean carburetor</p>
Engine without idle running	<p>Idle adjusting screw out of adjustment</p> <p>Ignition system damaged</p> <p>Wear</p>	<p>Readjust idle running or replace idle adjusting screw</p> <p>Examine ignition system</p> <p>Overhaul engine</p>

TROUBLE	CAUSE	REMEDY
Less power of engine	Air filter obstructed	Clean or renew airfilter
	Fuel supply partly interrupted or blocked	Blow through fuel pipe and clean carburetor
	Loss of compression due to loose spark plug	Tighten spark plug
	Exhaust system damaged	Check exhaust system for damage
	Engine has not enough preignition	Check and adjust ignition
	Reed paddles tensionless or damaged, surface of reed valve housing damaged	Replace reed paddles or reed valve housing
	Wear	Overhaul engine
Engine stalling or running with four stroke cycle	Carburetor overflows if level adjust too high, float needle seating is dirty or enlarged	Clean carburetor, if necessary replace float needle and adjust level
	Loose carburetor jets	Tighten jets
High rpm misfiring	Incorrect heat range spark plug or low quality spark plug	Refer to technical data section
	Loose, corroded or non conductive ignition socket connector	Check and seal with silicon
Engine splutters into the carburetor	Lack of fuel	Clean fuel pipes, examine tank aeration and clean
	Spark plug with incorrect heat value (Ignition by incandescence)	Fit correct spark plug
	Engine takes air out of control	Check intake flange and carburetor if firmly setted
Engine overheating	Incorrect ignition timing because of loose stator screws	Readjust to correct ignition timing specifications, secure screws with Loctite 243
	Incorrect compression ratio	Measure and adjust compression ratio
Excessive oil escapes from transmission breather tube	Excessive oil quantity in transmission	Correct transmission oil level

CLEANING »

Clean your motorcycle regularly in order to keep its painted finish looking shiny and new.

The best manner would be to use warm water that has been mixed with a commercially available washing detergent and a sponge. The hard dirt can be removed before with the help of a soft water jet.

! CAUTION

Never clean your motorcycle with a high-pressured cleaner or a high-pressured water jet, otherwise the water might run into the electrical components, connectors, sheathed cables, bearings, carburetor, etc. and cause malfunctions, i.e., lead to the premature destruction of these parts.

- You should use commercially available detergents to clean the motorcycle. Heavily soiled parts should also be cleaned with the help of a paint brush.
- Before cleaning with water, plug the exhaust pipe to prevent water ingress.
- After the motorcycle has been rinsed with a soft water jet, it should be dried by air pressure and a cloth. Then take a short drive until the engine has reached its operating temperature, and also operate the brakes. The heat also causes the water at the inaccessible parts of the engine and the brakes to evaporate.
- Slide back the protective covers on the handlebar-mounted instruments so that any water that may have seeped into this part of the motorcycle is allowed to evaporate.
- After the motorcycle has cooled down, oil and grease all the gliding bearing parts. Also treat the chain with a chain spray.
- To prevent failures in the electric system, you should treat the short circuit button with a contact spray.

STORAGE »

If you want to put your motorcycle away for longer periods of time, please observe the following instructions:

- Clean motorcycle thoroughly (see chapter: CLEANING)
- Change engine oil (old engine oil contains aggressive contaminations).
- Let the engine warm up again, close fuel tap and wait until the engine dies off by itself. In this way, the carburetor jets are prevented from becoming resin-clogged by the old fuel.
- Remove spark plug and fill in approx. 5 ccm of engine oil into the cylinder through the opening. Actuate kickstarter 10 times in order to distribute the oil onto the cylinder walls and mount the spark plug.
- Let fuel flow out of tank into an appropriate basin.
- Correct tire pressure.
- Lubricate bearing points of the control levers, footrests, etc. as well as the chain.
- The storage place should be dry and not be subjected to overly great temperature fluctuations.
- Cover the motorcycle with an air permeable tarpaulin or blanket. Do not use airtight materials, as possible humidity might not be able to escape and thereby cause corrosion.

! CAUTION

It would be very bad to let the engine run for a short time during the storage period. The engine would not get warmed up enough and the thus developed steam would condense during the combustion process and cause the exhaust to rust.

USE AFTER PERIOD OF STORAGE

- Fill up tank with fresh fuel.
- Check motorcycle as before each start (see driving instructions).
- Take a short, careful test ride first.

NOTE: Before you put your motorcycle away for the winter, you should check all parts for their function and wear. Should any service jobs, repairs, or any refitting be necessary, you should have them carried out during the off-season (lower workload at mechanics' shops). This way, you can avoid the long waiting times at your shop at the beginning of the next biking season.

TECHNICAL DATA – ENGINE »

ENGINE	50 AC SENIOR ADVENTURE	50 AC MINI ADVENTURE
Design	single cylinder 2-stroke engine, with reed valve inlet	
Displacement	49.0 ccm	
Bore/Stroke	39.5 / 40 mm	
Fuel	Lead-free SUPER FUEL (RON 95), mixed with 2-stroke oil	Lead-free SUPER FUEL (RON 95)
Lubrication	mixture lubrication	separate lubrication
Oil/gasoline ratio	1 : 60	–
2-stroke oil	high-grade two-stroke oils for mixture lubrication (Motorex Cross Power 2T)	high-grade two-stroke oils for separate lubrication (Motorex Cross Power 2T)
Crankshaft bearing	2 grooved ball bearing	
Connecting rod bearing	needle bearing	
Piston pin bearing	needle bearing	
Piston rings	1 rectangular ring	
Primary drive	straight cut spur gears, 16 : 57 t	
Transmission oil	0.15-0.2 liter (0.033-0.044 US gal) gear oil Dexron II (Motorex ATF Super)	
Spark plug	NGK BR 8 ECM	
Electrode gap	0.6 mm (0.0236 in)	
Carburetor	Dell'Orto PHVA 14 DS	Dell'Orto PHVA 12 XS
Airfilter	wet foam type air filter insert	

BASIC CARBURETOR SETTING		
MODEL	50 SENIOR ADVENTURE	50 MINI ADVENTURE
Type	Dell'Orto PHVA 14 DS	Dell'Orto PHVA 12 XS
Main jet	80 (70)	65 (70)
Needle jet	211 FA	211 FA
Idling jet	45	38
Jet needle	A10	A10
Needle position from top	3 rd	4 th
Air/Mixture reg. screw open	3.5	4
Slide	40	40
Starting jet	60	60

TIGHTENING TORQUES – ENGINE		
Primary gear nut	M14x1.25	40 Nm
Hexagon nut ignition rotor	M10x1.25	20 Nm
Nut of clutch hub	M10x1.25	Loctite 243 + 35 Nm
Cylinder head screws	M7	15 Nm
Cylinder base nuts	M8	18 Nm
Allen head bolt - Stator	M5x25	Loctite 243 + 8 Nm
Oil plug	M16	5 Nm
Oil drain plug	M10	15 Nm
Other engine bolts	M5	7 Nm
	M6	10 Nm
	M8	30 Nm

TECHNICAL SPECIFICATIONS – CHASSIS »

CHASSIS	50 SENIOR ADVENTURE	50 MINI ADVENTURE
Frame	single downtube, split-cradle	
Fork	Marzocchi Ø = 32 mm (1,26 in)	
Wheel travel front/rear	175/190 mm (6.9/7.5 in)	115/185 mm (4,5/7,3 in)
Rear suspension	Central shock absorber Paioli	
Front brake	Disk brake Ø 160 mm (6.4 in)	Drum brake Ø 90 mm (3,5 in)
Rear brake	Drumbrake Ø 90 mm (3,5 in)	
Tires front/rear	2.50x12" Pirelli MT32A / 2.75x10" MT320	2.50x10" Pirelli MT32A / 2.75x10" MT32A
Tire pressure	front/rear: 1.0 bar / 1.0 bar	front/rear: 1.0 bar / 1.0 bar
Fuel tank capacity	2 liter (0.52 US gallons)	
Final drive ratio	11 : 48	
Chain	1/2x3/16" 104 rolls	1/2x3/16" 96 rolls
Steering angle	66°	66°
Wheel base	1030 mm (40 in)	910 mm (35.8 in)
Seat height, unloaded	650 or 675 mm (25.6 or 26.6 in) adjustable	530 or 550 mm (21 or 21.7 in) adjustable
Ground clearance	255 mm (10 in)	182mm (7.2 in)
Rider's body height	max. 130 cm (51 in)	
Rider's body weight	max. 35 kg (78 lbs)	
Recommended age of rider	4 - 6 years	
Engine	50 AC	

TIGHTENING TORQUES – CHASSIS		
Hexagon nuts front axle	M12x1	40 Nm
Hexagon nuts rear axle	M12x1	40 Nm
Hexagon nut swing arm bolt	M10	45 Nm
Clamping bolt top triple clamp	M8	25 Nm
Clamping bolt bottom triple clamp	M6	10 Nm
Screws handlebar clamp	M8	20 Nm
Allan screw – Handlebar support	M10	Loctite 243 + 40 Nm
Front brake caliper	M8	Loctite 243 + 20 Nm
Front brake disk	M6 (10.9)	Loctite 243 + 10 Nm
Screw for brake pads	M6	4 Nm
Shock absorber top	M10	45 Nm
Shock absorber bottom	M10	45 Nm
Spoke nipple Mini Adventure	M3,5 (SW5)	2,0 - 2,5 Nm
Senior Adventure	M3,5 (SW5), M4 (SW5,5)	2,5 - 3,0 Nm
Other chassis screws	M5	6 Nm
	M6	10 Nm
	M8	25 Nm
	M10	45 Nm

STANDARD-ADJUSTMENT – FORK	
	50 SENIOR / MINI ADVENTURE
Spring	2,0 N/mm
Preload	10 mm (0.4 in)
Fork oil	SAE 7.5
Air chamber length	110 mm (4.3 in)

STANDARD ADJUSTMENT – SHOCK ABSORBER		
	50 SENIOR ADVENTURE	50 MINI ADVENTURE
Spring preload	12 mm (0.5 in)	8 mm (0.3. in)

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4/2006 FOTO: MITTERBAUER



KTM Group Partner



KTM-Sportmotorcycle AG
A-5230 Mattighofen
www.ktm.at

OWNER'S MANUAL 2007

50 SX JUNIOR
50 SX

ART. NR. 3.211.141 EN



ENGLISH

KTM

Now you own a modern motorcycle that you and your youngster will certainly enjoy, provided that you service and maintain it properly.

Please insert the serial numbers of the motorcycle below

Chassis number

Engine number

Stamp of dealer

All information contained is without obligation. KTM-Sportmotorcycle AG particularly reserves the right to modify any equipment, technical specifications, prices, colors, shapes, materials, services, service work, constructions, equipment and the like so as to adapt them to local conditions or to cancel any of the above items, all without previous announcement and without giving reasons. KTM may stop manufacturing certain models without previous notice. KTM shall not be held liable for any deviations of availability and/or ability to deliver, illustrations, descriptions, printing and/or other errors. The illustrated models partly contain extra equipment, which is not applied to standard models.

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In accordance with the international quality management ISO 9001 standard, KTM uses quality assurance processes that lead to the highest possible product quality.

INTENDED PURPOSE

KTM mini-sports motorcycles are designed and constructed to resist the usual wear and tear of normal use in competitions.

The motorcycles comply with the regulations and categories currently in effect with the leading international motorcycle associations.

OWNER'S MANUAL

Please read this manual thoroughly before letting your youngster ride the motorcycle for the first time. This manual contains important information and recommendations that will help you and your youngster to operate and handle the motorcycle properly. In the interest of everybody involved, we urge you to pay particular attention to instructions and information marked as follows:

WARNING

- Ignoring these instructions can be dangerous to life and limb!

CAUTION

- Ignoring these instructions may damage parts of the motorcycle or impair the motorcycle's traffic safety!

This manual contains important information on the operation and maintenance of your new KTM motorcycle. It went to press describing your model's latest state of development. Nevertheless, the descriptions may deviate slightly from the current design as our motorcycles are permanently improved. The Owner's Manual is an integral part of the motorcycle and must be handed over to the new owner when the motorcycle is sold.

SERVICE

Observance of the service, maintenance and tuning instructions for the engine and chassis specified in the Owner's Manual is a prerequisite for faultless operation and the avoidance of premature wear. An improperly tuned chassis can lead to damage and breakage of the chassis components (see chapter on checking the basic chassis setting).

The use of the motorcycle under extreme conditions, e.g. on extremely muddy and wet terrain, can lead to higher than average wear on components such as the drive train or the brakes. In this case it may become necessary to service or replace wear parts before the service limit specified in the maintenance schedule has been reached.

We expressly point out that work marked with an asterisk (*) in the chapter "Maintenance work on the chassis and engine" must be performed by a KTM workshop. If maintenance work should become necessary during a competition, it must be performed by a trained mechanic.

Please strictly observe the prescribed running-in periods and inspection and maintenance intervals. Compliance with these instructions will significantly prolong the life of your motorcycle.

WARRANTY

The service work specified in the "Lubrication and Maintenance Schedule" must be performed by a KTM workshop and recorded in the service manual otherwise claims under the warranty shall become void. No claims can be filed under the warranty for damage or consequential damage caused by manipulations or conversions to the motorcycle.

AUTOMOTIVE FLUIDS

The fuels and lubricants specified in the Owner's Manual or automotive fluids with equivalent specifications must be used in accordance with the maintenance schedule.

SPARE PARTS, ACCESSORIES

For the safety of your child, only use spare parts and accessories approved by KTM. KTM shall not assume any liability for other products or consequential damage resulting from the use of such products. When special needs arise, please contact a KTM dealer, who will seek the assistance of the KTM importer if necessary.

SAFETY

Parents should keep in mind that the safety of their youngsters always depends on the efforts made by the parents to ensure that the motorcycle is kept in good working order and only used on safe terrains. Nevertheless, driving the motorcycle, like driving any other vehicle, involves a potential risk. Therefore, please make sure that all fundamental precautions are taken. Please also read the „INFORMATION ON SAFE DRIVING FOR PARENTS“ on page 4.

TRANSPORT

When transporting your motorcycle, secure it with elastic straps or other mechanical devices in an upright position. Be sure that the fuel tap is closed. If the motorcycle topples over, fuel can flow out of the carburetor or fuel tank.

ENVIRONMENT

Riding an off-highway motorcycle is a wonderful form of outdoor recreation and we certainly hope that you and your youngsters will enjoy it to the full. However, this enjoyable outdoor activity can cause environmental problems or lead to conflicts with other people. Responsible use of the motorcycle will prevent such problems and conflicts. You can contribute to securing the future of motorcycling by making sure that you and your youngsters only use the motorcycle within the limits established by the applicable laws, making environmental protection one of your top priorities and never violating other people's rights.

In this spirit, we hope that you and your youngsters will always safely enjoy your motorcycle!

KTM-SPORTMOTORCYCLE AG
5230 MATTIGHOFEN, AUSTRIA

Attachments: 1 spare parts manual chassis & engine



KTM mini motorcycles are off-road motorcycles designed for one person only. They are not allowed on public roads.

The vehicle dimensions and components are designed for children from 4 to 10 years of age with a maximum weight of 35 kg (78 lbs) and a maximum height of 130 cm (51 in).

- Have your youngster wear proper protective gear whenever he or she rides the motorcycle: helmet, eye protection, chest, back, arm and leg protectors, gloves and boots. To set a good example, be sure to wear protective gear yourself whenever riding a motorcycle!
- Before your youngster takes his or her first ride, explain how each of the controls works and check if your youngster has understood what you explained. We recommend to review the entire owner's manual with your youngster item by item, paying particular attention to the specially marked warnings and pointing out the danger of injury.
- Instruct your youngster about riding and falling techniques, explain how the motorcycle will respond to shifting of the rider's weight, etc.
- Before starting the motorcycle for the first time check whether the basic fork and shock absorber settings are suitable for your child's weight (see chapter on checking the basic chassis setting)
- Before using the motorcycle you should always check all components for proper operation (see maintenance schedule). Have your youngster perform these technical checks himself / herself as well.
- Whenever you go for a ride with your youngster, keep in mind that the speed should be adjusted to your youngster and not the other way around.
- Your youngster must understand that all instructions he or she receives from you or any other supervising adult must be followed.
- Your child must be physically ready to ride a motorcycle. This means that he or she must at least be able to ride a bicycle. Being good at sports that require fast reactions is an additional advantage. Your youngster should be strong enough to pick up the motorcycle after a fall.
- Never demand too much of your youngster. Give him or her time to get used to the motorcycle and to improve his / her riding skills. Do not even consider letting your youngster participate in a race before his / her physical condition, riding skills and motivation have sufficiently developed.
- Explain to your youngster that he / she should always adjust his / her riding speed to the local conditions as well as to his / her own riding skills and that excessive speed can cause falls and severe injuries. Always keep in mind that youngsters tend to underestimate dangers or fail to recognize them altogether. The riding speed must be reduced, in particular, on unknown terrain.
- Never let your youngster ride the motorcycle without supervision. An adult should always be present.
- The motorcycle is designed for one rider only. Your youngster is not allowed to transport a passenger.
- When you go for a ride, somebody at home should always know where you are going and when you will be back. This makes it easier to send you help, should problems occur.

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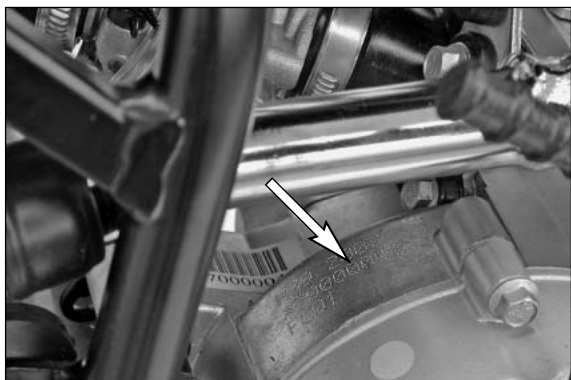
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SERIAL NUMBER LOCATIONS »



Chassis number

The chassis number is located on the type plate on the steering head. Enter this number in the field on page no 1.



Engine number

The engine number is stamped into the right half of the engine case next to the kickstarter. Enter this number in the relevant field on page 1.



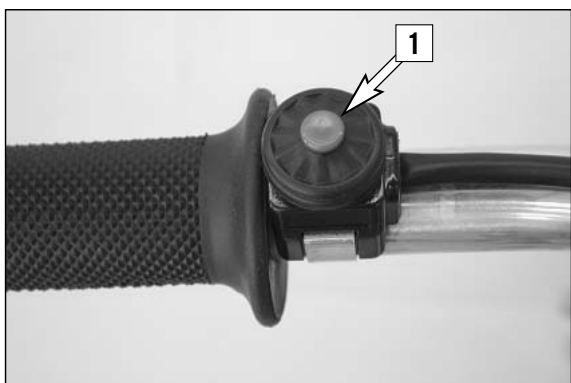
Throttle grip

The throttle grip is located on the right side of the handlebars. It is used to reduce the engine speed and, thus, the driving speed.



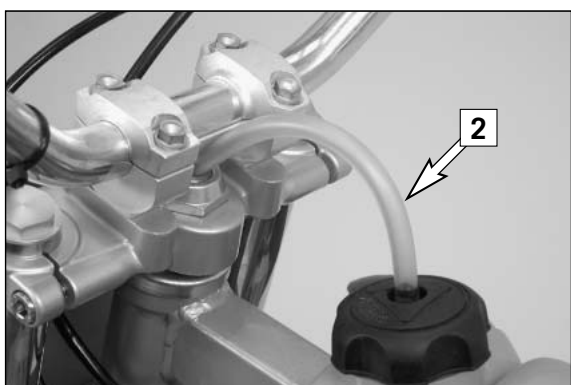
Hand brake lever

The hand brake lever is located on the right side of the handlebars and actuates the front wheel brake. The basic position can be adjusted to fit your child's hand.



Short circuit button

The short circuit button [1] turns off the engine. When pressing this button, the ignition circuit is short-circuited.

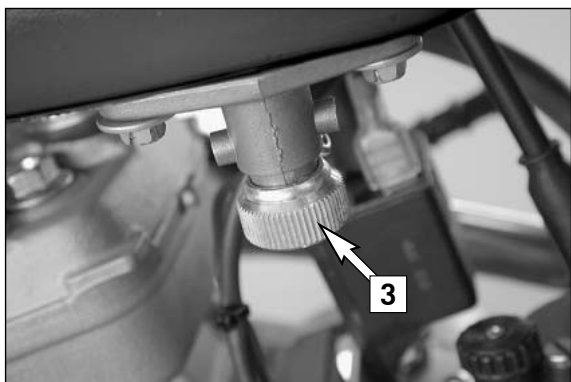


Filler cap

To open it: turn filler cap counter-clockwise.

To close it: put filler cap back on and tighten it by turning it clockwise.

Install tank breather hose [2] without kinks.

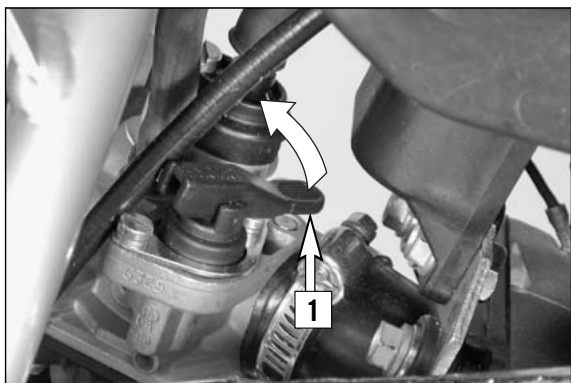


Fuel tap

The fuel tap [3] is located at the front of the motorcycle on the left side of the tank.

Opening the fuel tap: Turn the knob all the way to the left.

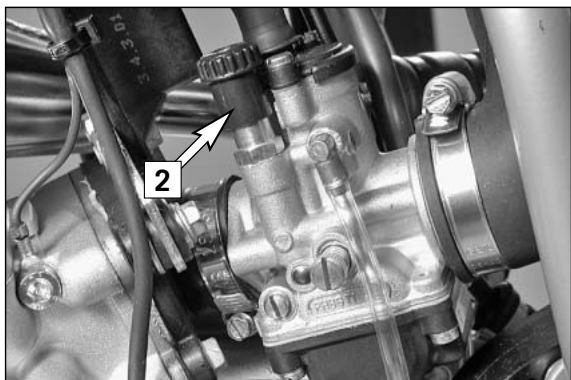
Closing the fuel tap: Turn the knob all the way to the right.



Choke (Dell'Orto carburetor PHVA 14 DS)

Choke lever [1] is mounted to the right side of the carburetor. If you move the choke lever up to the stop, a hole is opened in the carburetor through which the engine can draw in additional fuel. This results in a "rich" fuel-air mixture required for a cold start.

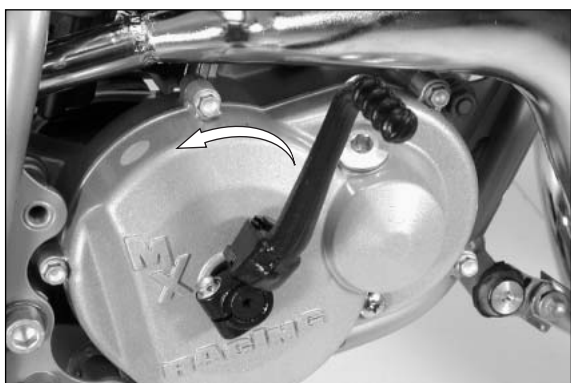
Moving the choke lever back closes the hole in the carburetor again.



Choke (Dell'Orto carburetor PHBG 19 BS)

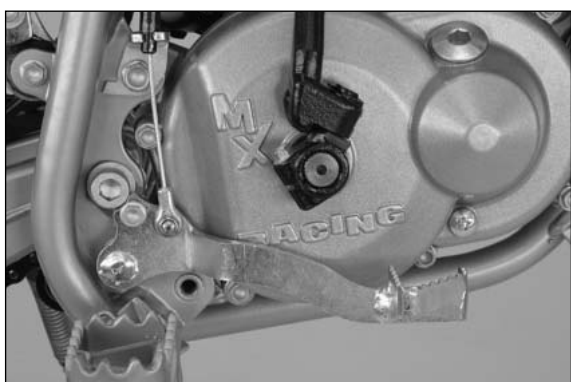
Choke control knob [2] is mounted to the left side of the carburetor. If you pull the choke control knob up to the stop and turn it 90°, a hole is opened in the carburetor through which the engine can draw additional fuel. This results in a "rich" fuel-air mixture required for a cold start.

Turning back the choke control knob returns the knob to the starting position and closes the hole in the carburetor again.



Kickstarter

The kickstarter is mounted on the right side of the engine. Its upper part can be swivelled.



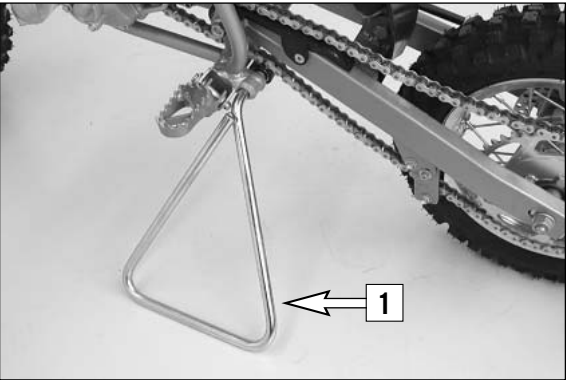
Foot brake lever

The foot brake lever is located in front of the right footrest. The basic position can be adjusted to the seating position (see maintenance work).



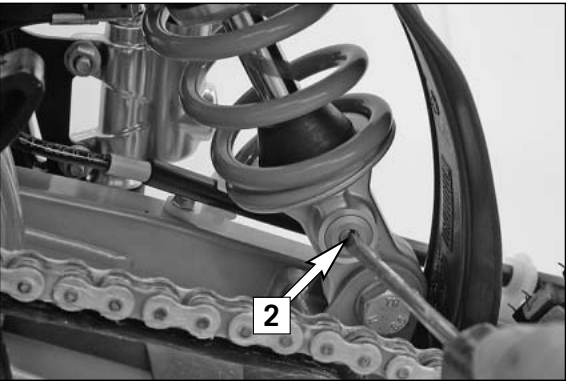
Side stand

Use your foot to swing the side stand forwards to the stop. Make sure it rests securely on solid ground.



Plugin - Stand (50 SX)

A socket is provided on the left side of the frame for the plug-in stand [1] included in the scope of supply.



Rebound damping function of the shock absorber

By using the adjusting screw [2], the degree of damping of the rebound can be adjusted. Turn the knob clockwise to increase damping, turn it counterclockwise to reduce damping during rebounding.

STANDARD ADJUSTMENT:

- turn the adjusting screw clockwise to the stop.
- then turn the adjusting screw counterclockwise, counting the number of clicks that corresponds to the respective type of shock absorber.

50 SX Junior:12

50 SX:10

⚠ WARNING

- Never turn the setting wheel more than two clicks between two test rides.
- Do not try to disassemble the shock absorber or to perform maintenance work yourself. Danger of injury!



Instructions for the first ride

- Make sure the work for the "pre-delivery inspection" was performed by your authorized KTM workshop. The DELIVERY CERTIFICATE and SERVICE MANUAL will be handed over when you pick up your vehicle.
- Before your youngster takes his or her first ride, explain how each of the controls works and check if your youngster has understood what you explained. We recommend to review the entire owner's manual with your youngster item by item, paying particular attention to the specially marked warnings and pointing out the danger of injury.
- Adjust the basic position of the hand brake lever to fit the size of your child's hand. Your child should of course wear gloves. Adjust the foot brake lever to your child's seating position.
- To prevent injury, teach your youngster the basic riding skills on soft ground, e.g. on a meadow or in the garden. Be sure that there is room enough to maneuver, and that no other riders are close.
- To ensure that your youngster gets the feel of the brakes, have your youngster operate the brakes while you push the motorcycle. Do not start the engine before your youngster has learned to apply both brakes with appropriate pressure.
- Now your youngster must get the feel of the throttle. Start the engine, hold the motorcycle and have your youngster slowly open the throttle. Then, your youngster can take his/her first ride. Initially, your youngster should ride back and forth between two persons who help the young rider to stop the motorcycle. However, you should also teach your youngster how to stop the motorcycle himself/herself.
- To improve his/her riding skills, your youngster should practise to ride the motorcycle standing on the footpegs or riding at the slowest possible speed. Additionally, you can arrange a series of obstacles and have your youngster drive around them, etc.
- Tell your youngster to look 3-10 m ahead, depending on the speed, to recognize and avoid obstacles. When riding through curves, the rider should also look far ahead into the curve.
- Pay attention to running-in procedure.

Running in

- Even very precisely machined sections of engine components have rougher surfaces than components which have been sliding across one another for quite some time. Therefore, every engine needs to be broken in. Do not load the engine to the power limit during the first half hour for this reason.
- Apply low but changing loads for running-in.
- **NO FULL-LOAD OPERATION DURING THE FIRST HALF HOUR!**

WARNING

- **Have your youngster wear proper protective gear whenever he or she rides the motorcycle: helmet, eye protection, chest, back, arm and leg protectors, gloves and boots. To set a good example, be sure to wear protective gear yourself whenever riding a motorcycle!**
- **The motorcycle has a centrifugal clutch. The motorcycle begins to move as soon as the throttle is opened.**
- **Always apply the front brake when starting the engine and release the brake slowly when the engine is running. An activated choke increases the idle speed of the engine, the centrifugal clutch thus beginning to engage. Therefore, the motorcycle can begin to move when the brake levers are released.**
- **When the engine speed drops to the level at which the centrifugal clutch disengages, braking with the engine is no longer possible and the motorcycle can only be slowed down using the brakes.**
- **Your child should never drive faster than its skills and the terrain permit.**
- **Never let your child drive its motorcycle unchaperoned.**
- **Replace the helmet visor or goggle glasses early enough. When light shines directly on a scratched visor or goggles, you will be practically blind.**
- **Only use accessory parts recommended by KTM.**
- **Never leave your motorcycle without supervision as long as the engine is running.**
- **KTM mini models are designed for one person only. Passengers are not allowed.**
- **These models do not comply with the regulations and safety standards established by the law. Therefore, they are not permitted on public roads.**
- **Always keep in mind that other people feel molested by excessive noise.**

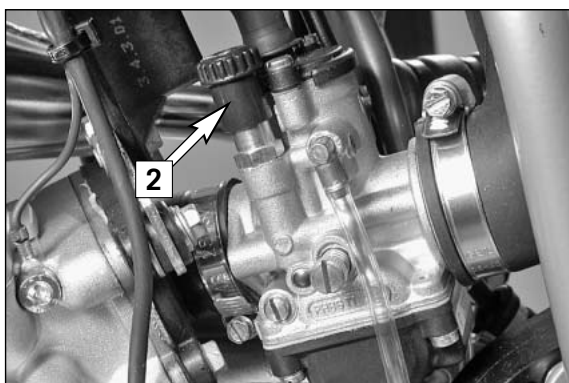
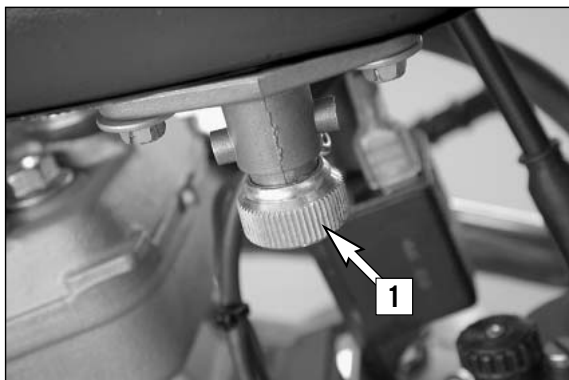


What you should check before each start

When you start off, the motorcycle must be in a perfect technical condition. For safety reasons, you should make it a habit to perform an overall check of your motorcycle before each start.

The following checks should be performed:

- 1 CHECK TRANSMISSION OIL LEVEL**
A lack of gear oil leads to premature wear and finally results in destruction of the gear wheels.
- 2 FUEL**
Check that there is sufficient fuel in the tank; when closing the filler cap, check that the tank venting hose is free of kinks.
- 3 COOLING FLUID**
Check the level of cooling fluid when the engine is cold.
- 4 CHAIN**
A loose chain may fall off the chain wheels; an extremely worn chain may tear, and insufficient lubrication may result in unnecessary wear of the chain and chain wheels.
- 5 TIRES**
Check for damaged tires. Tires showing cuts or dents must be replaced. Also check the air pressure. Insufficient tread and incorrect air pressure deteriorate the driving performance.
- 6 BRAKES**
Check for proper functioning, check brake fluid level in the tank. The tank is designed such that it does not need to be refilled, even if the brake shoes are worn. If the brake fluid falls below the minimum level, the brake system is either leaking or the brake shoes are completely worn out. Have the brake system checked at a KTM workshop to avoid brake failure. Also have the condition of the brake hose and the brake lining thickness checked.
Check the play of the hand brake lever and foot brake lever.
- 7 THROTTLE CABLE**
Check the throttle cable for proper adjustment and smooth operation.



Starting when the engine is cold

- 1 Open fuel tap [1].
- 2 Operate the choke [2].
- 3 Kick the side up all the way or remove the plug-in stand.
- 4 Apply the front brake.
- 5 Operate the kickstarter, depressing it all the way, without opening the throttle.

⚠ WARNING

- When starting the engine, put on motorcycle boots in order to avoid injuries. You may slip off the kickstarter, or the engine may kick back if you do not kick hard enough.
- Do not start the engine and allow it to idle in a closed area. Exhaust fumes are poisonous and can cause loss of consciousness and death. Always provide adequate ventilation while the engine is running.

! CAUTION

Don't ride your motorcycle with full load and high revs when engine is cold. Because the piston is warming up faster than the water cooled cylinder, it can cause engine damage.

NOTE:

The highly inflammable components in modern fuels volatilize if left standing for longer periods of time. If the motorcycle has not been used for over 1 week, the fuel should be drained from the float chamber. The engine will start up immediately if the float chamber is filled with fresh, ignitable fuel.

Starting when the engine is warm

- 1 Open fuel tap [1].
- 2 Kick the side up all the way or remove the plug-in stand.
- 3 Apply the front brake.
- 4 Operate the kickstarter, depressing it all the way, without opening the throttle.

What to do when the engine is "flooded"

- 1 Close fuel tap [1].
- 2 Applying the front brake.
- 3 Start engine with full throttle. If necessary, unscrew spark plug and dry it.
- 4 Once the engine is running, open fuel tap again.

Starting off

Slowly release the brake lever while simultaneously opening the throttle.

⚠ WARNING

Always make sure the side stand is kicked all the way up or the plug-in stand removed before you let your child drive off. The motorcycle could run out of control if the stand touches the ground.



Driving

The engine speed, and thus the driving speed, are regulated by the throttle grip.

The choke must always be deactivated as soon as the engine has warmed up.

⚠ WARNING

- After falling with the motorcycle, check all its functions thoroughly before using it again.
- A bent handlebar must always be replaced. Never try to straighten the handlebar because this will cause it to lose its stability.

! CAUTION

- Driving a cold engine at high speed will reduce the life of the engine. We recommend to warm the engine up at a medium engine speed for several minutes before switching to full load.
- Never tilt the motorcycle over the side stand to warm up the engine. The side stand could fold away and the motorcycle run out of control.
- In the event that, while your child is riding on the motorcycle, you notice any unusual operation-related noise, your child should stop immediately, turn the engine off, and contact an authorized KTM dealer.

Braking

Close the throttle and squeeze both brake levers simultaneously. On sandy, wet or slippery terrain the rear wheel brake should be preferred. The brakes should always be operated carefully as locking wheels can cause skidding or falls.

⚠ WARNING

- Brake drum and linings heat up during brake operation, thus reducing the effect of the brakes.
- Wet brakes have reduced brake performance, therefore be sure to brake them dry after cleaning.
- If the resistance of the hand brake lever feels unresponsive, something is wrong with the brake system. Have the brake system checked at a KTM workshop before you let your child drive the motorcycle.

Stopping

Reduce the speed. Immediately before the motorcycle comes to a stop, put the left foot down. To turn off the engine, press the short circuit button until the engine stops. Close the fuel tap.

⚠ WARNING

Motorcycles produce great heat during operation. Therefore, keep in mind that the engine, the exhaust system and the brakes can heat up considerably. Make sure that these parts are not touched and always take care, when parking the motorcycle, that other persons will not burn themselves.

! CAUTION

- Close the fuel tap when leaving the motorcycle. Otherwise the carburetor may get flooded and fuel will enter the engine.
- The side stand or plug-in stand is designed to hold the weight of the motorcycle only. By sitting on the motorcycle, your child will put additional weight on the side stand, possibly causing the side stand or frame to be damaged or the motorcycle to fall down.

Refueling, fuel

Oil (high-grade two-stroke engine oil) must be mixed with the fuel (ROZ 95) at a mixing ratio of 1:60.

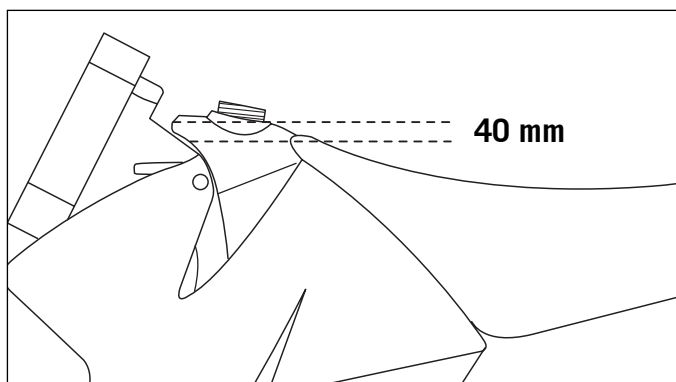
Fuel and engine oil should only be mixed immediately before use. KTM recommends Motorex 2T Cross Power.

⚠ WARNING

Gasoline is highly flammable and poisonous. Extreme caution should be used when handling gasoline. Never refuel the motorcycle near open flames or burning cigarettes. Always switch off the engine before refueling. Be careful not to spill gasoline on the engine or exhaust pipe while the engine is hot. Wipe up spills promptly. If gasoline is swallowed or splashed in the eyes, seek a doctor's advice immediately.

! CAUTION

- Only use premium-grade gasoline ROZ 95 mixed with high-grade two-stroke engine oil. Other types of gasoline can cause engine failure.
- Only use known brands of high-grade 2-stroke engine oil (Motorex 2T Cross Power).
- Not enough oil or low-grade oil can cause erosion of the piston. When using too much oil, the engine may start smoking and foul the spark plug.
- Fuel expands when its temperature rises. Therefore do not fill the tank to the top. (see fig.)



PERIODIC MAINTENANCE SCHEDULE »

50 SX JUNIOR 50 SX		Service every 5 hours	Service every 20 hours	before every race
A CLEAN MOTORCYCLE CAN BE CHECKED MORE QUICKLY WHICH SAVES MONEY!				
ENGINE	Check engine for leaks	●	●	
	Change transmission oil	●	●	
	Check spark plug, change it if necessary, set electrode gap		●	
	Check the clutch engagement speed	●	●	●
CARBURETOR	Check carburetor for a tight fit at intake flange		●	
	Check intake flange for cracks		●	
	Check idle setting when engine is warm		●	
ADD-ON-PARTS	Check cooling system for leaks, check quantity of antifreeze		●	
	Check exhaust system for leaks and suspension		●	
	Check actuating cables for damage, smooth operation, and kinkless arrangement, adjust and lubricate	●	●	●
	Clean air filter and air filter box	●	●	●
BRAKES	Check brake fluid level, lining thickness, brake discs		●	●
	Check the brake line and the brake control cable for damage		●	●
	Check/function adjust smooth operation, free travel of handbrake/footbrake levers	●	●	●
	Check screws of brake system for a tight fit	●	●	●
CHASSIS	Check suspension strut and fork for leaks and a proper function		●	●
	Check swinging-fork pivot		●	●
	Check/adjust steering-head bearing		●	●
	Check all chassis screws for a tight fit (fork plates, axle nuts, swinging-fork pivot, suspension strut)		●	●
WHEELS	Check spoke tension and rim joint	●	●	●
	Check tire condition and inflation pressure		●	●
	Check chain, chain joint, chain wheels, chain wheel guides for wear, a tight fit, and tension	●	●	●
	Lubricate chain	●	●	●
	Check wheel bearings for play	●	●	●

PERIODIC MAINTENANCE SCHEDULE »

50 SX JUNIOR 50 SX	every 20 hours	every 40 hours	once a year
ADDITIONAL SERVICE WORK TO BE PERFORMED UNDER A SEPARATE ORDER			
Check the reed-type intake valve for wear	●	●	
Check the clutch shoes for wear	●	●	
Check the clutch drum for wear	●	●	
Check the water pump shaft and bearings for wear	●	●	
Check the water pump wheel for wear	●	●	
Check the cylinder and piston for wear	●	●	
Check the eccentricity of the crankshaft journal	●	●	
Check the radial clearance of the conrod bearings	●		
Check the radial clearance of the piston pin main bearing	●		
Check the crankshaft main bearing for wear	●		
Replace the crankshaft bearings and conrod bearings		●	
Check the entire transmission including bearings for wear		●	
Drain and clean the carburetor's float chamber			●
Perform complete fork maintenance			●
Clean and lubricate the swinging-arm bearing			●
Clean and lubricate the steering-head bearing and sealing elements			●
Change brake fluid			●

NOTE: If the inspection establishes that permissible tolerances are exceeded, the respective components must be replaced.

The kilometer reading for inspection intervals should not exceed 5 hours.

Maintenance work performed by your authorized KTM workshop is not a substitute for care and maintenance by the driver!

NOTE: A service hour counter (item no.: SXS05450600) is available from your KTM dealer for strict observance of the service intervals.

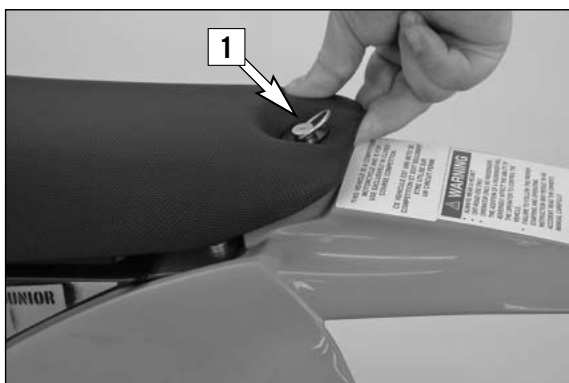
50 SX JUNIOR 50 SX	before each start	after every cleaning	for cross country use	once a year
VITAL CHECKS AND CARE PROCEDURES TO BE CONDUCTED BY THE OWNER OR THE MECHANIC				
Check transmission oil level	●			
Check cooling liquid level	●			
Check brake fluid level	●			
Check brake pads for wear	●			
Check brake performance	●	●		
Lubricate and adjust actuating cables and nipples		●		
Remove and clean dust sleeves of telescopic fork at regular intervals			●	
Clean and lubricate chain, check tension and readjust it if necessary		●	●	
Clean air filter and filter box			●	
Check tire inflation pressure and wear	●			
Check fuel line for leaks	●			
Drain and clean float chamber		●		
Verify smooth operation of all controls	●			
Treat exposed metal components (except for the brake and exhaust systems) with wax-based anti-corrosion agents		●		
Check all screws, nuts, and hose clamps for their tight fit at regular intervals				●

⚠ WARNING

Maintenance work and adjustments marked with an asterisk (*) must be performed by an expert. To protect your youngster, always have such work performed by a specialized KTM dealer where your motorcycle will be optimally serviced by appropriately qualified, skilled staff.

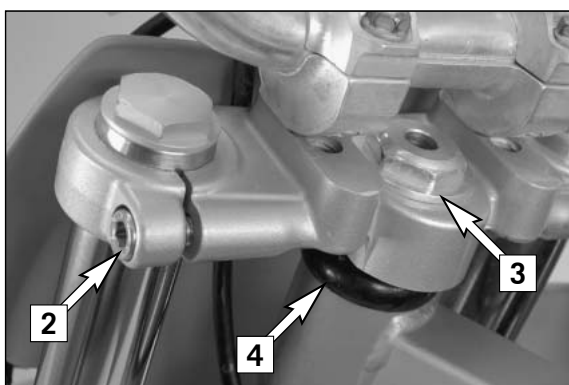
! CAUTION

- When cleaning the motorcycle, do not use a high pressure cleaning unit if possible, otherwise water will penetrate the bearings, carburetor, electric connectors, drum brakes, etc.
- Before cleaning with water, plug the exhaust pipe to prevent water ingress.
- When transporting your motorcycle, secure it with elastic straps or other mechanical devices in an upright position. Be sure that the fuel tap is closed. If the motorcycle topples over, fuel can flow out of the carburetor or fuel tank.
- Do not use toothed washers or spring rings with the engine fastening screws, as these work into the frame parts and keep working loose. Instead, use self-locking nuts.
- Let your motorcycle cool down before beginning any maintenance work in order to avoid getting burned.
- Dispose of oils, fatty matters, filters, fuels, washing detergents, etc. properly.
- Under no circumstances may used oil be disposed of in the sewage system or in the open countryside. 1 liter of used oil contaminates 1,000,000 liters of water.



Removing the seat

The quick-release mechanism [1] allows removal of the seat without tools. Turn the quick-release device approximately 180° counterclockwise, lift the rear portion of the seat and pull the seat off backwards. When mounting the seat ensure that the hook engages at the tank.



Checking and adjusting the steering head bearing (50 SX Junior) *

The steering head bearing should be checked regularly for play. For this purpose, jack up the motorcycle by the frame so that the front wheel is in the air. Now try to move the fork forward and backward. There should be no clearance. For readjustment, release the two clamp screws [2] of the top triple clamp and the counternut [3]. Turn the adjusting nut [4] until almost no play is left. Do not tighten the adjusting nut! Tightening the adjusting nut can damage the bearings! Keep in mind that tightening the counternut [3] reduces the play of the bearing. Slightly tap the top triple clamp with a rubber hammer to prevent jamming. Then tighten the 2 clamp screws with 25 Nm.

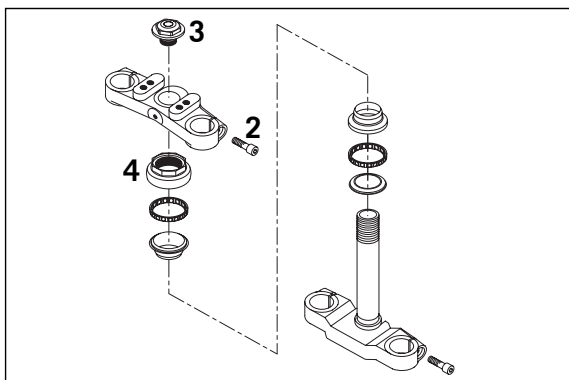
⚠ WARNING

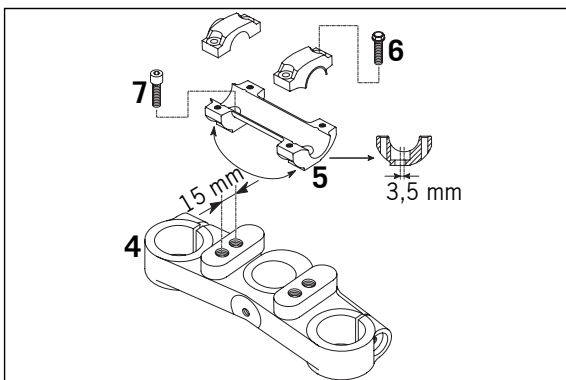
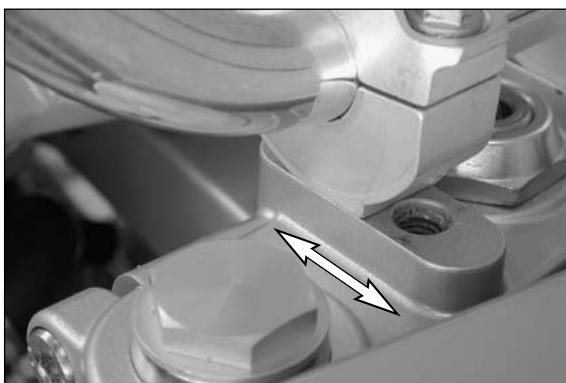
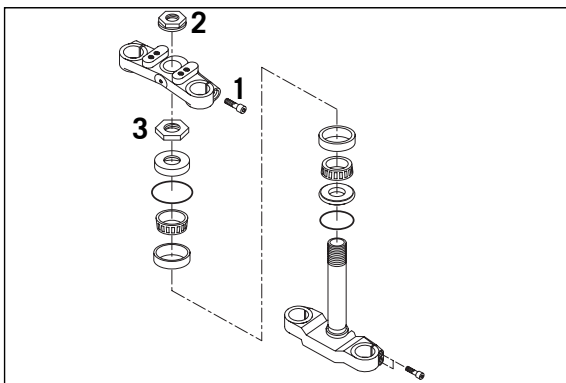
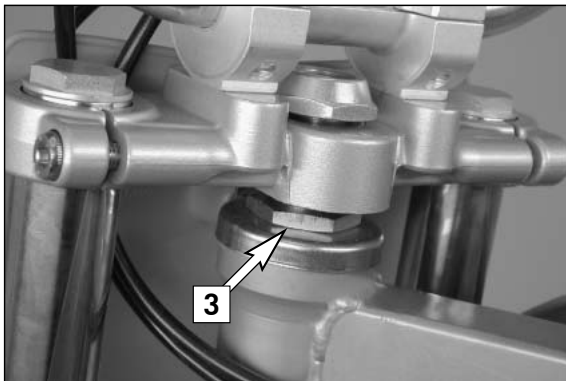
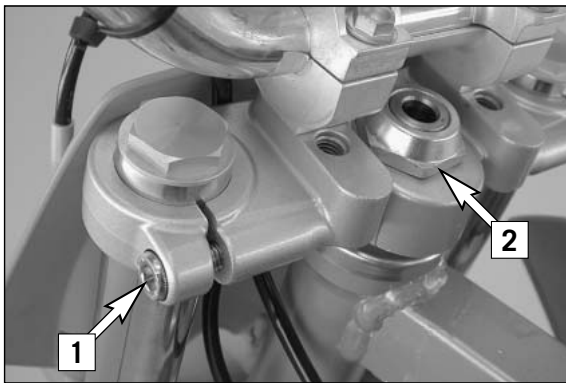
If the steering head bearing is not adjusted to be free of clearance, the motorcycle will exhibit unsteady driving characteristics and can get out of control.

! CAUTION

- The handlebar must move easily. Otherwise the bearings will be damaged.
- If you drive with play in the steering head bearing for longer periods, the bearings and subsequently the bearing seats in the frame will be destroyed.

At least once a year, the steering head bearings should be smeared with waterproof grease (Motorex Long Term 2000).





Checking and adjusting the steering head bearing (50 SX) *

The steering head bearing should be checked regularly for play. To check, support the motorcycle frame and lift the front wheel off the ground. Now try to move the fork back and forth – you should not feel any play. To adjust, loosen both clamping screws [1] on the upper triple clamp and loosen the steering head screw [2] by a few turns. Lift the triple clamp slightly and turn the adjusting nut [3] until hardly any play is left. Never tighten the adjusting nut since you might damage the bearing. Tighten the steering head screw to a torque of 10 Nm and the 2 clamping screws to 25 Nm.

⚠ WARNING

If the steering head bearing is not adjusted to be free of clearance, the motorcycle will exhibit unsteady driving characteristics and can get out of control.

! CAUTION

- The handlebar must move easily. Otherwise the bearings will be damaged.
- If you drive with play in the steering head bearing for longer periods, the bearings and subsequently the bearing seats in the frame will be destroyed.

At least once a year, the steering head bearings should be smeared with water-proof grease (Motorex Long Term 2000).

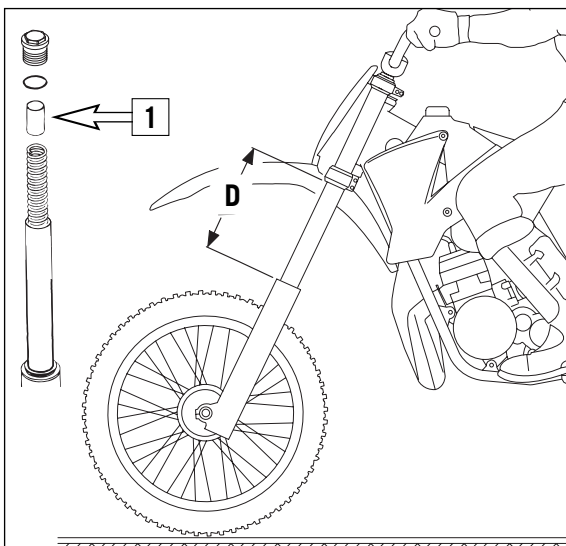
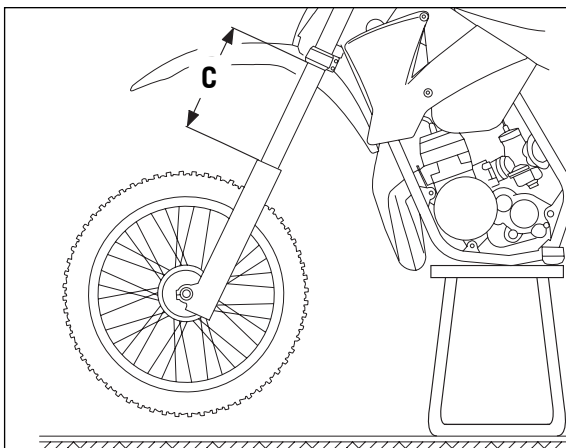
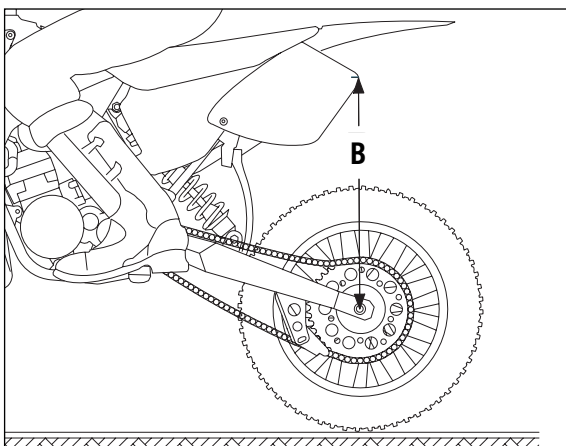
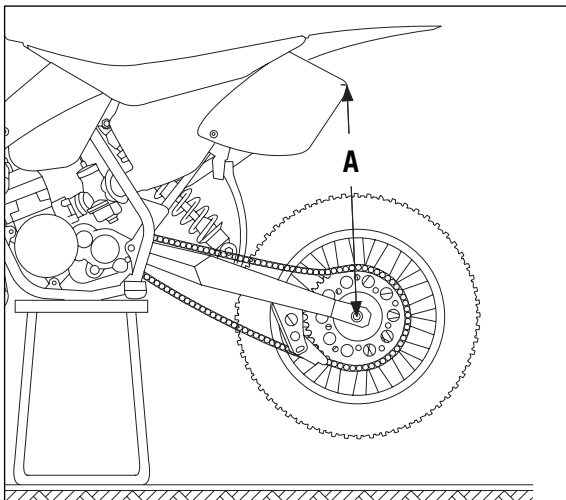
How to change the handlebar position

The handlebar position can be readjusted by 22 mm (0.9 in). The upper triple clamp [4] includes 2 bores arranged at a distance of 15 mm (0.6 in) from one another. The bores at the handlebar support [5] are offset from the center by 3.5 mm (0.13 in). Accordingly, you can mount the handlebar in 4 different positions.

For this purpose, remove screws [6] of the handlebar clamps and screws [7] of the handlebar support. Position handlebar support, and tighten screws [7] to 40 Nm. Mount handlebar and handlebar clamps, and tighten screws [6] to 20 Nm. The gap between the handlebar support and handlebar clamps should be the same size in the front and in the rear.

! CAUTION

The screws [7] must be secured with Loctite 243.



Basic suspension setup for the weight of the driver

To achieve maximum handling performance and to prevent the telescopic fork and shock absorber from being damaged, the basic setup of the suspension components must be suitable for your child's weight. At delivery, KTM's mini motorcycles are set to accommodate a driver weighing 25 - 30 kg (wearing full protective clothing). If your child's weight exceeds or falls short of this range, you will need to adjust the spring preload for the telescopic fork and shock absorber accordingly.

To adjust, check the sag of the shock absorber and telescopic fork. The motorcycle should be filled up and your child should be wearing full protective clothing.

To determine the sag of the shock absorber

- Jack up the motorcycle until the rear wheel no longer touches the ground.
- Measure the vertical distance between the rear wheel axle and a fixed point (e.g. a mark on the side cover) and write it down as dimension A.
- Place the motorcycle on the ground again.
- Have your child sit on the motorcycle in a normal seating position (feet on the footrests) wearing full protective clothing and bounce up and down a few times to allow the rear wheel suspension to become level.
- Holding your child and the bike, have another person measure the distance between the same two points with the load on the motorcycle to establish dimension B.
- The sag is the difference between dimensions A and B.

EXAMPLE:

Motorcycle jacked up (dimension A)	..... 400 mm
Motorcycle on ground with driver seated (dimension B)	..... – 355 mm
Sag	..... 45 mm

50 SX Junior shock absorber sag	..... 45 mm (± 5 mm)
50 SX shock absorber sag	..... 50 mm (± 5 mm)

If the sag is lower, the spring preload of the shock absorber must be reduced, if the sag is higher, the spring preload must be increased (see Changing spring preloading of the shock absorber). A harder spring is also available for the 50 SX (see spare parts catalog).

To determine the sag of the telescopic fork

- Jack up the motorcycle until the rear wheel no longer touches the ground.
- Measure the distance between the upper edge of the slider tube and the triple clamp and write it down as dimension C.
- Have your child sit on the motorcycle in a normal seating position (feet on the footrests) wearing full protective clothing, and bounce up and down a few times to allow the telescopic fork to become level.
- Holding your child and the bike, have another person measure the distance between the same two points with the load on the motorcycle to establish dimension D.
- The sag is the difference between dimensions C and D.

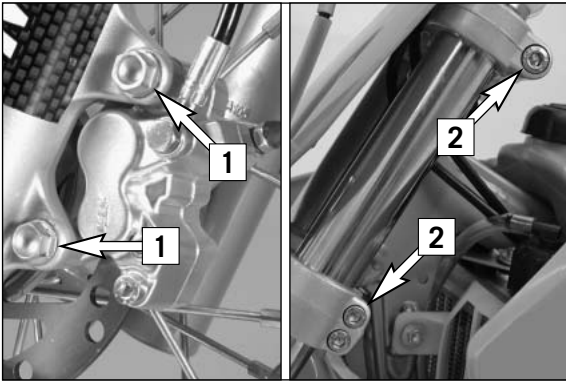
EXAMPLE:

Motorcycle jacked up (dimension C)	..... 200 mm
Motorcycle on ground with driver seated (dimension D)	..... – 160 mm
Sag	..... 40 mm

50 SX Junior telescopic fork sag	..... 30 mm (± 5 mm)
50 SX telescopic fork sag	..... 45 mm (± 5 mm)

If the sag is lower, the spring preload of the telescopic fork must be reduced, if the sag is higher, the spring preload must be increased.

The preload on the fork spring is determined by the length of preload spacer [1]. If an adjustment is necessary, demount the fork legs, remove the plugs and shorten the pretensioning sleeves or replace with longer ones (see maintenance of telescopic fork). Harder fork springs are also available for both models (see spare parts catalog).



Telescopic fork maintenance *

The telescopic fork must be serviced at least once a year.

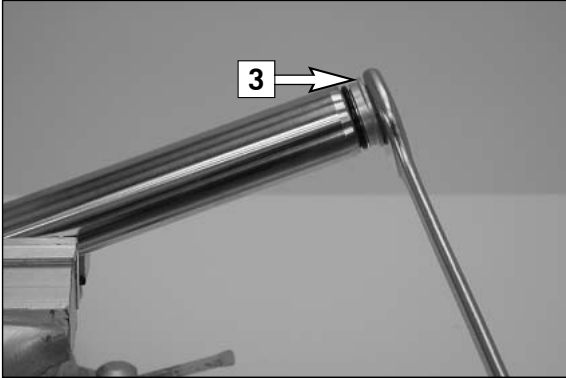
To service the fork, proceed as follows:

Prop up the motorcycle under the frame to take the load off the front wheel. Disassemble the front wheel, remove screw [1] from the brake caliper and unscrew holding clamp. Measure the projection of the fork legs at the upper fork stabilizer and make a note of the measurement.

Loosen the clamping screws [2] on the fork stabilizers and pull the fork legs down out of the fork stabilizers.

! CAUTION

- Do not operate the hand brake when the front wheel has been dismounted.
- Make sure the brake disc is always on top when you lay down the wheel, otherwise the brake disc can be damaged.



Clamp the fork leg into a vise (use protective jaws) and remove the plugs [3]. Take the preload spacer and the spring out of the fork tube.

Remove screws [4] at the underside of the slider tubes and pull the fork tubes out of the slider tubes.

Remove the dust scrabbers [5].



Thoroughly clean all parts and check for wear.

Generously lubricate seals and springs and reassemble the telescopic fork.

Tighten the screws on the bottom of the sliding tubes to 30 Nm.

Fill in fork oil and assemble the fork (see below). Degrease the screws on the brake caliper and apply Loctite 243. Mount the brake caliper and tighten to 20 Nm. Mount brake line and holding clamp.

Insert fork legs in the fork stabilizers (projection as previously noted) and tighten clamping screws to 25 Nm (top) and 10 Nm (bottom).

Mount front wheel (see chapter: mounting the front wheel).

! WARNING

The screws [1] must be secured with Loctite 243.



Changing the telescopic fork oil *

Remove front wheel and fork legs (see above).

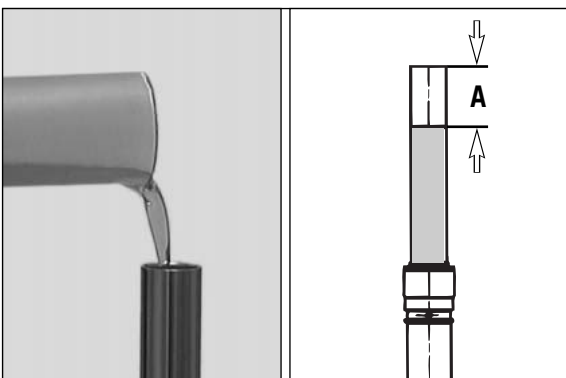
Remove plugs, preload spacers and springs.

Drain the fork oil into an appropriate container.

Clean the dust scrabbers.

! WARNING

- It is very important to keep the brake disk free from oil and fatty matters. Otherwise, the braking effect would be strongly reduced.
- After working on the brake system, always operate the hand brake lever to apply the brake shoes to the brake disk and have a point of pressure.



Pour 170 cm³ SAE 7.5 fork oil into each fork tube.

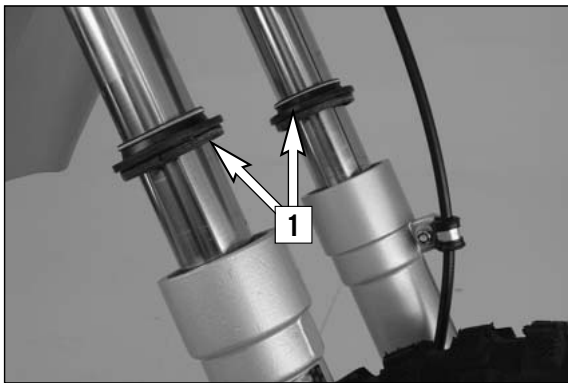
Slide the fork tube all the way into the slider tube.

Adjust the air-chamber length [A] to 110 mm (4.5 in) by extracting or adding fork oil.

Insert springs and pretensioning sleeves into the fork tube.

Check O-rings, grease and mount plugs.

Mount the fork legs, front wheel and brake caliper (see above).



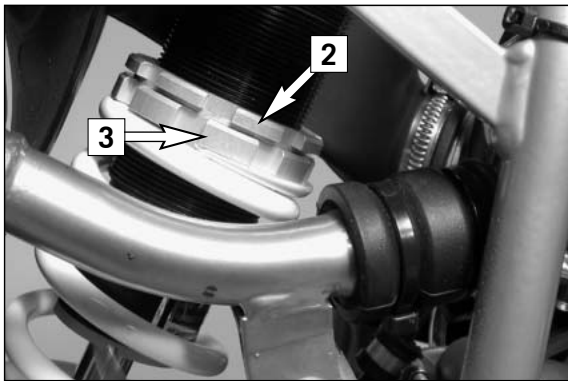
Cleaning the dust scrabbers of the telescopic fork

The dust-protection bellows [1] are to remove dust and coarse dirt particles from the fork tube. However, after some time, dirt may also get in behind the dust-protection bellows. If this dirt is not removed, the oil sealing rings located behind it may start to leak.

For this purpose, use a screwdriver to lift the dust scrabbers out of the slider tubes, clean them thoroughly with compressed air, spray the fork tubes and dust scrabbers with Universal oil spray (Motorex Joker 440) or engine oil. Then, push the dust-protection bellows into the outer tubes by hand.

⚠ WARNING

No oil may reach the front tire or the brake disks since this would considerably reduce the tire's road grip and the braking effect of the front brake.



Changing spring preloading of the shock absorber

This is easily done.

NOTE: Before changing the spring preload note down the basic setting, e.g. how many threads are visible above the adjusting ring.

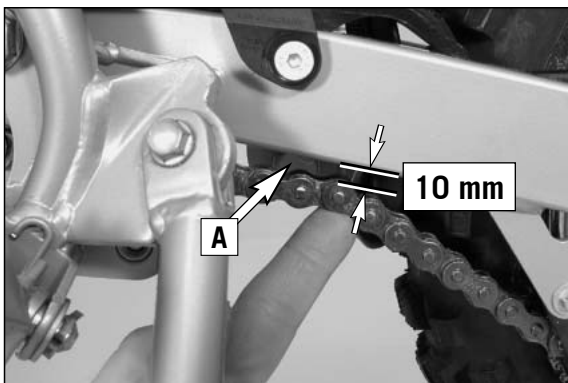
Remove the right side cover.

Loosen the locking ring [2] with the hook spanner. Change the spring preload with the adjusting ring [3] and re-tighten the locking ring [2].

BASIC SETTING – SPRING PRELOAD:

50 SX Junior:5 mm (0.2 in)

50 SX:3 mm (0.12 in)



Check chain tension

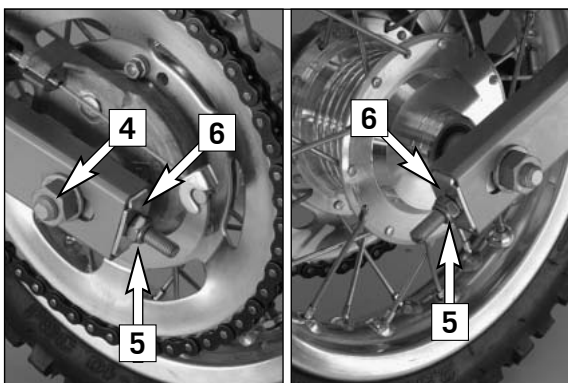
Put the motorcycle on the sidestand.

Chain tension has to be checked close to the lower rear shock mounting [A]. When pushing the chain upwards, the distance to the swingarm has to be 10 mm (0.4 in).

If necessary, correct chain tension.

⚠ WARNING

- If chain tension is too great, parts within the secondary transmission (chain, chain wheels, gear box and rear wheel bearings) will be subjected to unnecessary stress, resulting in premature wear and even chain breakage.
- Too much slack in the chain, on the other hand, can result in the chain jumping off the chain wheels. If this happens, the chain could also block the rear wheel or damage the engine. In either case the operator is likely to lose control of the motorcycle.
- Be careful not to get your finger caught between the chain and the rear sprocket or other components.



Correct chain tension

Release the hexagon nut of the wheel spindle [4] and turn the left and the right hexagon nut [5] equally far.

Before tightening the hexagon nut of the wheel spindle to 40 Nm, ensure that the supporting plates [6] are resting against the swing arm. Additionally, check that the rear wheel is aligned with the front wheel.

Chain maintenance

For long chain life, good maintenance is very important. Chains without O-rings should be cleaned in fireproof solvent regularly and afterwards treated with hot grease or chain spray (Motorex Chainlube Racing).

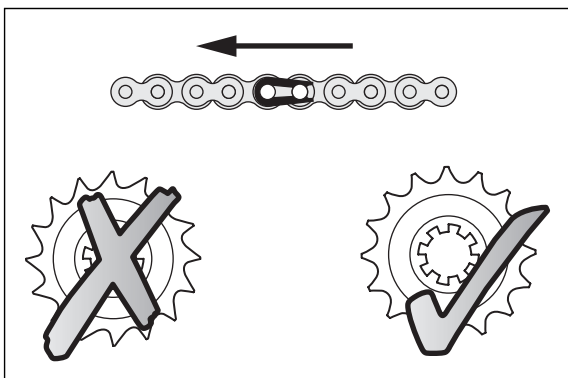
⚠ WARNING

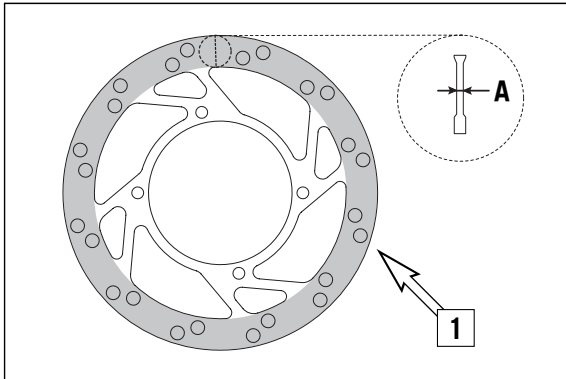
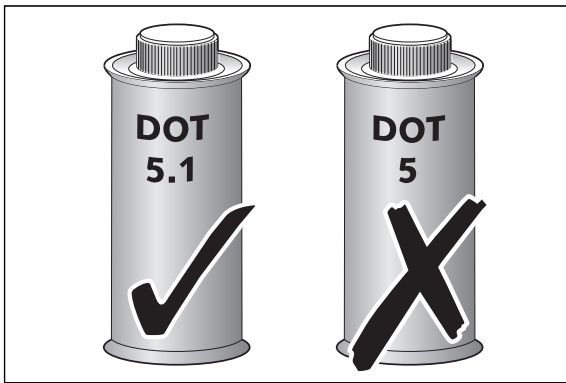
Keep the rear wheel free of grease! Grease on the rear wheel will significantly reduce the grip of the rear tire and the motorcycle could easily get out of control.

! CAUTION

When mounting the chain masterlink clip, the closed side of the masterlink clip must point in running direction.

Also check sprockets and chain guides for wear, and replace if necessary.





General information about KTM disc brakes

BRAKE FLUID RESERVOIRS:

The brake fluid reservoirs for the front brake is designed such that it does not need to be refilled, even if the brake shoes are worn. If the brake fluid level drops below the minimum level either the brake system has a leak or the brake pads are completely worn.

In this case, consult an authorized KTM dealer immediately.

BRAKE FLUID:

KTM fills the brake system with "Motorex Brake Fluid DOT 5.1", one of the best brake fluids currently available. We recommend that you continue to use it. DOT 5.1 brake fluid is based on glycol ether and of an amber color. If you do not have any DOT 5.1 for refilling, you may use DOT 4 brake fluid. DOT 4 shown on the lid means minimum standard. However, you should replace it as soon as possible by DOT 5.1.

⚠ WARNING

Have the brake fluid changed at least once annually. If you wash your motorcycle often, the brake fluid should be changed even more frequently. Brake fluid tends to absorb water. Therefore, vapor pockets may form in "old" brake fluids even at low temperatures, causing the brake system to fail.

BRAKE DISC:

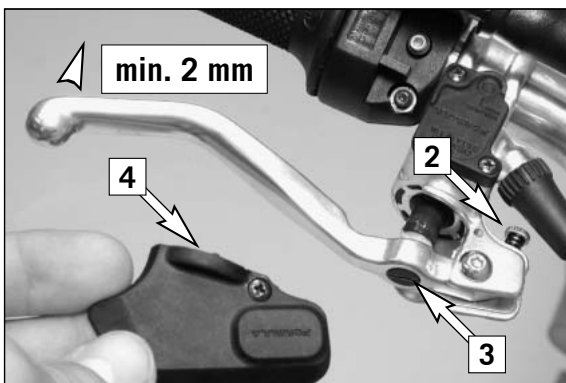
Due to wear, the thickness of the brake disc in the area of the contact face [1] of the brake pads decreases. The brake disk must be at least 2.50 mm thick at the thinnest point [A]. Check the thickness of the brake disk at several points.

⚠ WARNING

- A brake disk worn down to less than 2.50 mm is a safety risk. Have the brake disk replaced as soon as it reaches the service limit.
- Have any repairs on the brake system be performed by a KTM dealer.

BRAKE CALIPERS:

Secure the screws on the brake caliper with Loctite 243 and tighten to a torque of 20 Nm.

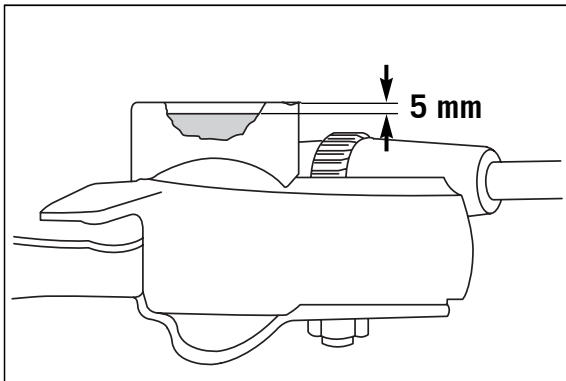
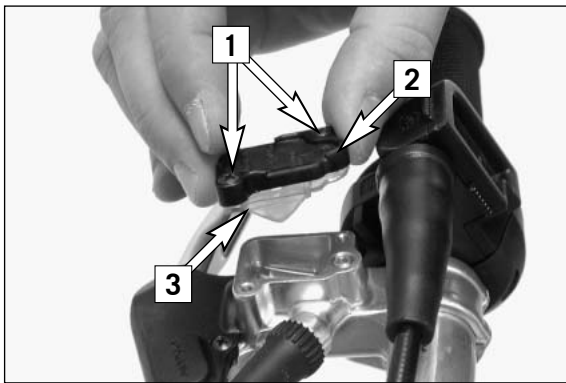


Setting the basic position and play of the hand brake lever *

You can adjust the basic position of the hand brake lever to fit your child's hand by turning stop screw [2]. Afterwards, be sure to adjust the play of the hand brake lever to 2 mm (0.08 in) with the adjusting screw [3]. To adjust, remove covering cap [4]. Replace the covering cap after making the adjustment.

! CAUTION

At the hand brake lever, free travel must at least be 2 mm (0.08 in). Only then may the piston in the hand brake cylinder be moved (to be recognized by the greater resistance of the hand brake lever). If this free travel is not provided, pressure will build up in the braking system, and the front-wheel brake may fail due to overheating.



Checking the brake fluid level / refilling *

The brake fluid reservoir is combined with the hand brake cylinder on the handlebar. To check the brake fluid level, press the brake pistons back into the basic position. Move the hand brake cylinder in a horizontal position, remove the screws [1] and the cover [2] with the diaphragm [3]. The brake fluid level should be 5 mm below the upper edge of the reservoir (see drawing), otherwise add DOT 5.1 brake fluid (e.g. Motorex Brake Fluid DOT 5.1) up to 5 mm below the upper edge of the reservoir.

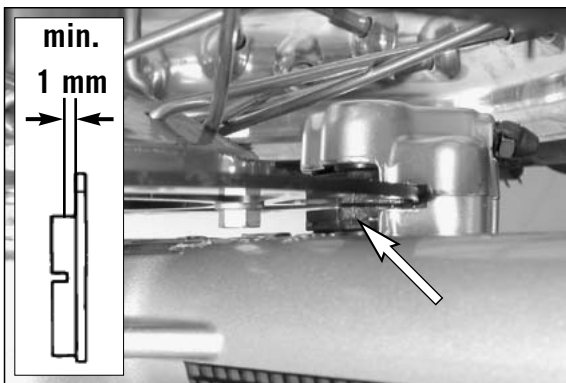
Mount the diaphragm, the cover and the screws and actuate the hand brake lever until you feel the point of pressure again. Wipe off any overflowing or spilled brake fluid with water.

⚠ WARNING

- Actuate the hand brake lever until you feel the point of pressure again.
- Never use DOT 5 brake fluid! It is based on silicone oil and of a purple color. Seals and brake hoses must be especially adapted to it.
- Store brake fluid out of reach of children.
- Brake fluid can cause skin irritation. Avoid contact with skin and eyes. If you get brake fluid in your eyes, rinse with plenty of water and consult a doctor.

! CAUTION

- Don't let brake fluid get in contact with paint, it is an effective paint remover.
- Use only clean brake fluid taken from a tightly sealed container.



Checking front brake pads

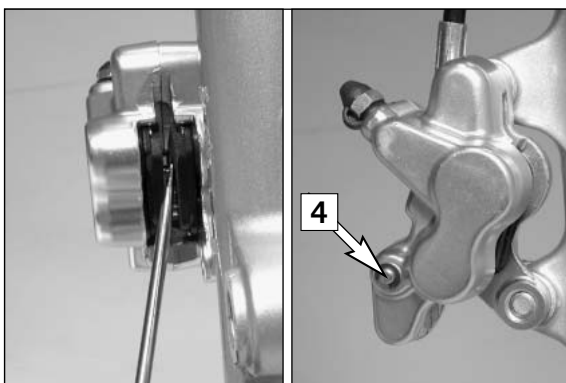
Inspect the brake pads from in front of the vehicle. The linings must be at least 1 mm (0.04 in) thick.

⚠ WARNING

At their most worn point brake pad linings should not be thinner than 1 mm (0.04 in), otherwise they could lead to brake failure. For your own safety don't put off having your brake pads changed.

! CAUTION

If the brake pads are replaced too late so that the lining is partly or entirely worn, the steel components of the brake pad will rub against the brake disc, thereby impairing the braking effect and destroying the brake disc.

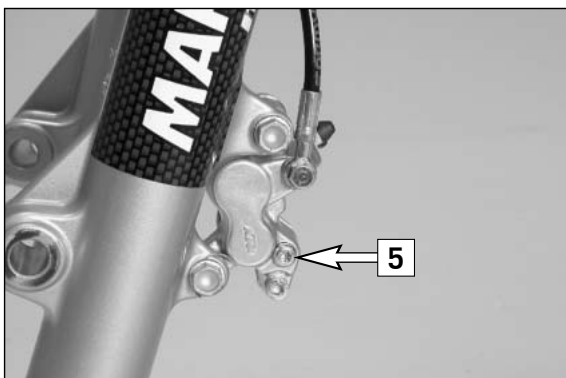


Replacing the front brake pads *

Remove the front wheel (see front wheel chapter).

Press brake shoes apart with a suitable screwdriver to put the brake pistons in their basic position.

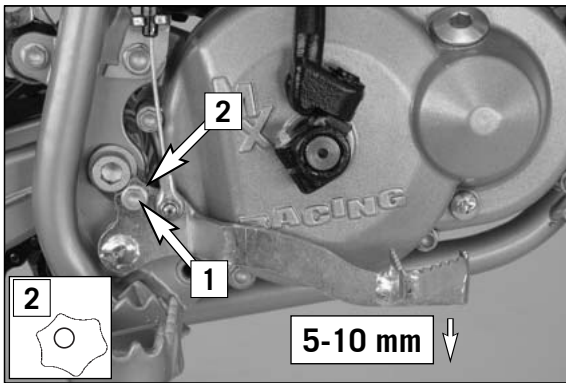
Remove the lock washer [4] from the screw as well as fixing screw [5] and take the brake shoes out of the brake caliper. Clean brake caliper thoroughly with compressed air.



Mount the left brake shoe and fix with screw. Mount the right brake shoe and tighten the screw to 4 Nm. Mount the lock washer. Align brake shoes, mount front wheel (see chapter: Mounting the front wheel).

⚠ WARNING

- It is very important to keep the brake disk free from oil and fatty matters. Otherwise, the braking effect would be strongly reduced.
- After assembly, check if circlips have been fitted correctly.
- Do not unscrew any other screws on the brake caliper or you will have to bleed the brake system.
- After working on the brake system always operate the hand brake lever to apply the brake pads to the brake disk and create a point of pressure.



Changing the basic position of the foot brake lever (50 SX Junior)

The basic position of the foot brake lever can be changed by unscrewing screw [1] and then turning the retainer [2].

Afterwards, check the setting of the rear wheel brake.

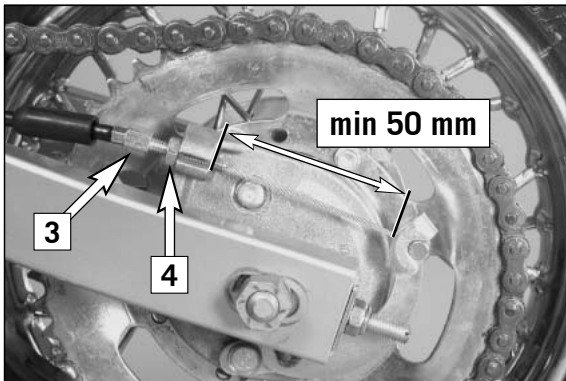
Adjusting the control cable on the rear wheel (50 SX Junior)

You should be able to press the foot brake lever 5 to 10 mm (0.2-0.4 in) before the rear wheel begins to brake.

The brake control cable is adjusted with adjusting screw [3] on the brake anchor cover. First loosen lock nut [4] and then tighten again.

! CAUTION

After making adjustments, always make sure the wheel turns freely.

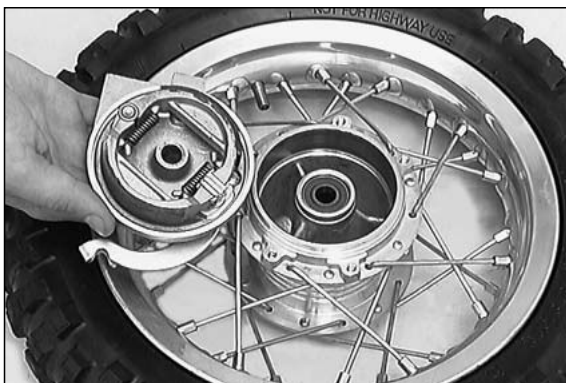


Checking the rear brake linings for wear (50 SX Junior)

The brake linings must be replaced when the distance between the hub brake lever and the cable support, measured with the brake lever squeezed, is less than 50 mm (2 in) (see illustration).

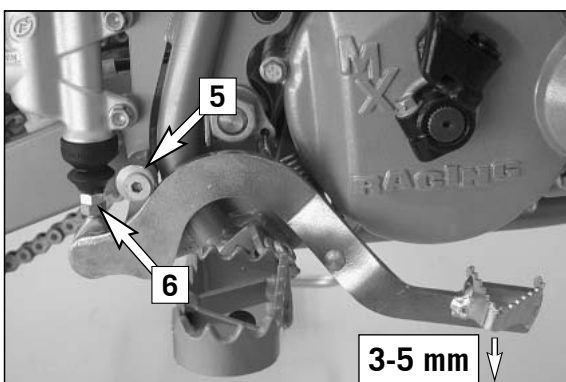
! CAUTION

If the brake linings are replaced too late, i.e. when the lining is partly or fully worn away, the metal shoes will rub against the brake drum, thus reducing the braking effect and destroying the brake drum.



Drum brake maintenance (50 SX Junior)

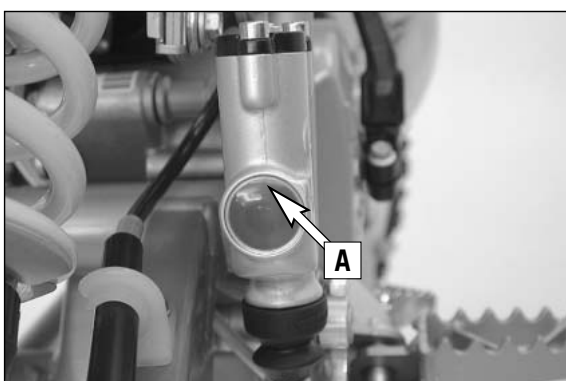
Drum brake maintenance is limited to occasional blowing out of the brake drum and brake shoes. Brake drum and brake linings can be slightly roughened with an abrasive tape.



Changing the basic position of the foot brake lever (50 SX) *

The basic setting of the foot brake pedal can be changed by turning the end stop roller [5]. Using the push rod [6], the free play on the foot brake pedal must be set.

Measured on the outside, the foot brake pedal must have 3-5 mm of free play, before the push rod can move the piston in the brake cylinder (to be recognised from the resistance on the foot brake pedal)



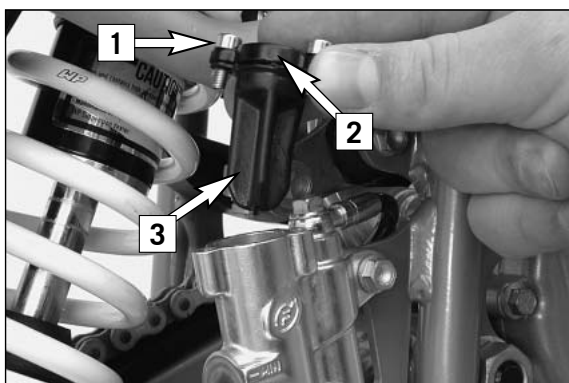
Checking the rear brake fluid level (50 SX)

The reservoir for the rear disk brake is on the right side of the motorcycle on the rear brake cylinder.

No air bubble should be visible in inspection glass [A] when the vehicle is parked in a vertical position.

⚠ WARNING

If the brake fluid level drops below the upper edge of the inspection glass, this indicates that the brake system is either leaking or the brake shoes completely worn.



Refilling the rear brake fluid reservoir (50 SX) *

Remove the screws [1] and take off the cover [2] and diaphragm [3]. The brake pistons must be pushed back to their basic position. Fill DOT 5.1 brake fluid (e.g. Motorex Brake Fluid DOT 5.1) up to 10 mm under the upper edge of the reservoir.

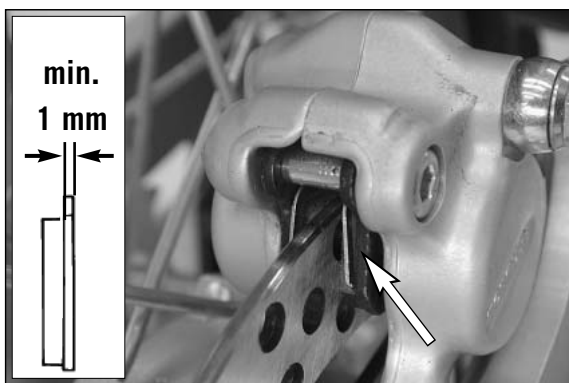
Remount the diaphragm, cover and screws and actuate the foot brake lever until you feel the point of pressure again. Wipe any overflowing or spilled brake fluid off with water.

⚠ WARNING

- Actuate the foot brake lever until you feel the point of pressure again.
- Never use DOT5 brake fluid! It is based on silicone oil and of a purple color. Seals and brake hoses must be especially adapted to it.
- Store brake fluid out of reach of children.
- Brake fluid can cause skin irritation. Avoid contact with skin and eyes. If you get brake fluid in your eyes, rinse with plenty of water and consult a doctor.

! CAUTION

- Don't let brake fluid get in contact with paint, it is an effective paint remover.
- Use only clean brake fluid taken from a tightly sealed container.



Checking the rear brake pads (50 SX)

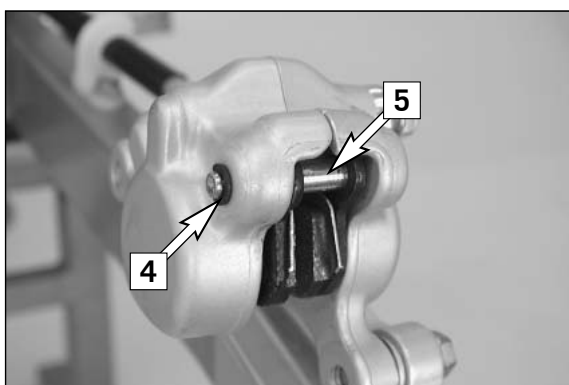
The brake pads can be inspected from the rear. The thickness of the linings may not be less than 1 mm (0.04 in).

⚠ WARNING

At their most worn point brake pad linings should not be thinner than 1 mm, otherwise they could lead to brake failure. For your own safety don't put off having your brake pads changed.

! CAUTION

If the brake pads are replaced too late so that the lining is partly or entirely worn, the steel components of the brake pad will rub against the brake disc, thereby impairing the braking effect and destroying the brake disc.



Replacing the rear brake pads (50 SX) *

Dismount the rear wheel (see "Dismounting the rear wheel").

Press the brake shoes apart with a suitable screwdriver to allow the brake pistons to return to their basic position.

Remove the locking screw [4], unscrew the screw [5] and pull the brake shoes out of the brake caliper.

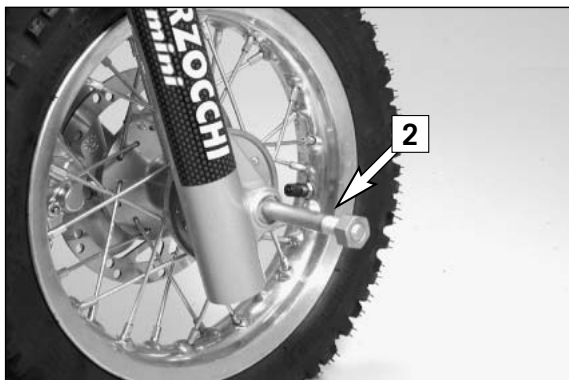
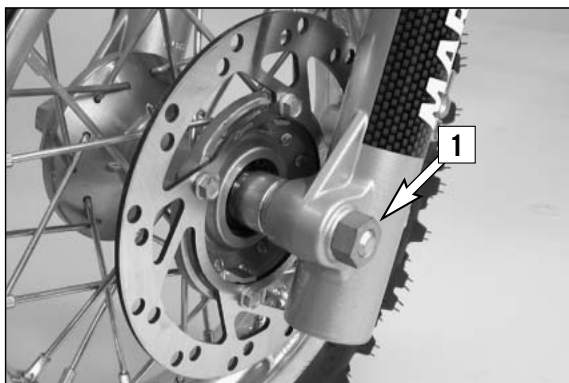


Slide new brake shoes into the brake caliper and fasten with the screw [5]. Tighten the screw to 10 Nm and mount the locking screw [4].

Mount the rear wheel and actuate the foot brake lever until you can feel the pressure point.

⚠ WARNING

- It is very important to keep the brake disk free from oil and fatty matters. Otherwise, the braking effect would be strongly reduced.
- After assembly, check if circlips have been fitted correctly.
- After working on the braking system, one must always actuate the hand brake lever or foot brake lever, respectively so as to ensure that the brake pads will lie against the brake disk and the pressure point is established.



Removing and mounting the front wheel

Jack the motorcycle up by the frame so that the front wheel is suspended above the ground.

Undo the hexagon nut [1] and remove it together with the washer.

Hold the front wheel and pull out the wheel spindle [2].

Carefully take the front wheel out of the fork.

! CAUTION

- Do not operate the hand brake when the front wheel has been dismounted.
- Make sure the brake disc is always on top when you lay down the wheel, otherwise the brake disc can be damaged.

Lift the front wheel into the fork and correctly position it.

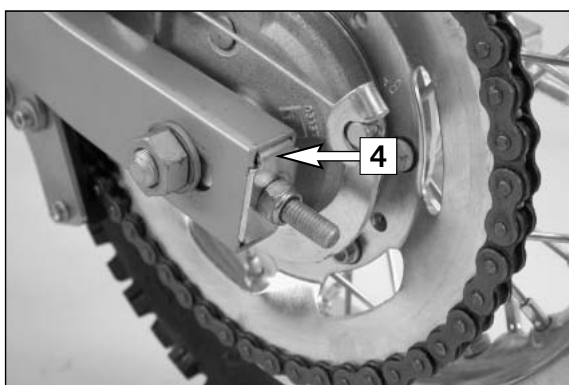
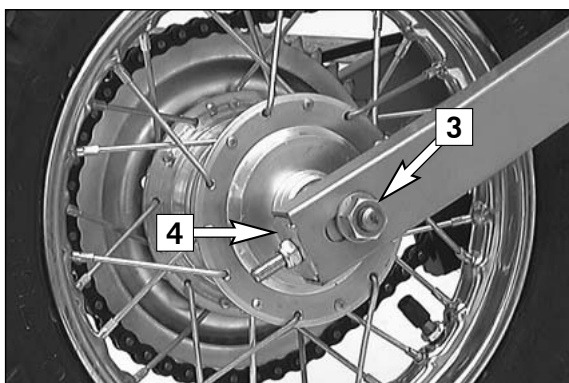
Mount the wheel spindle [2].

Mount the washer and the hexagon nut [1] and tighten 40 Nm.

Put the motorcycle back on the ground and operate the front wheel brake until the working point is reached.

⚠ WARNING

- If you don't happen to have a torque wrench at hand, make sure you have the tightening torque corrected by a KTM dealer as soon as possible. A loose axle may lead to an unstable driving behavior of your motorcycle.
- After mounting the front wheel, keep operating the hand brake until the pressure point returns.
- It is very important to keep the brake disk free from oil and fatty matters, otherwise the braking effects would be strongly reduced.



Removing and mounting the rear wheel

Prop up the motorcycle under the frame.

Remove hexagon nut [3] on the wheel spindle and disk.

Hold the rear wheel and remove the wheel spindle.

Move the rear wheel forwards, remove chain, lift the rear wheel out of the swinging fork and remove the brake anchor.

! CAUTION

- Do not operate the rear brake when the rear wheel has been dismounted.
- Make sure the brake disc is always on top when you lay down the wheel, otherwise the brake disc can be damaged (50 SX).

To mount the wheel reverse the procedure described above.

Always hook the brake backing plate into the swing arm support.

Before tightening the hexagon nut of the wheel spindle, ensure that the supporting plates [4] are resting against the swing arm. Additionally, check that the rear wheel is aligned with the front wheel.

Tighten the hexagon nut to 40 Nm.

⚠ WARNING

- If you don't happen to have a torque wrench at hand, make sure you have the tightening torque corrected by a KTM dealer as soon as possible. A loose axle may lead to an unstable driving behavior of your motorcycle.
- After mounting the rear wheel, keep operating the rear brake until the pressure point returns (50 SX).
- It is very important to keep the brake disk free from oil and fatty matters, otherwise the braking effects would be strongly reduced (50 SX).



Tires, air pressure

Tire type, tire condition, and air pressure level affect the way your motorcycle rides, and they must therefore be checked whenever you are getting ready to go anywhere on your motorcycle.

- Tire size can be found in the technical specifications.
- Tire condition has to be checked every time you want to ride your motorcycle. Before leaving, check tires for punctures and nails or other sharp objects that might have become embedded in them.
- Regularly check the "cold" tire pressure. Correct tire pressure (1.0 bar / 14 psi) guarantees optimum grip and maximum tire life.

⚠ WARNING

- **Damaged tires must be replaced immediately to protect your youngster.**
- **Worn tires can have a negative effect on how the motorcycle performs, especially on wet surfaces**
- **Tire pressure below the normal level will lead to premature tire wear.**

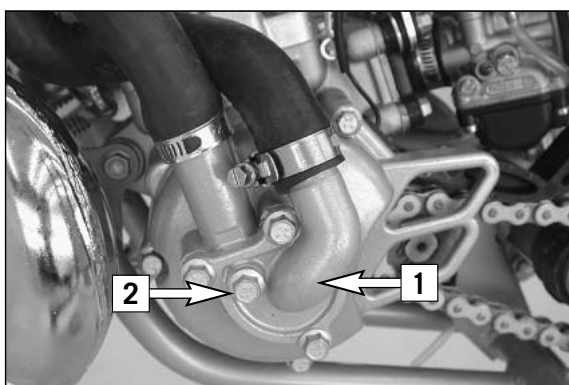


Checking spoke tension

The correct spoke tension is very important for the stability of the wheels and thus for riding safety. A loose spoke causes the wheel to become unbalanced and before long other spokes will have come loose. Check spoke tension, especially on a new motorcycle, at regular intervals. If necessary, have the spokes retightened and the wheel centered by a KTM dealer.

⚠ WARNING

- **Spokes can tear if you continue to ride with them loose. This may lead to an unstable handling of your motorcycle.**
- **Excessively tensioned spokes may rupture due to local overloading. The spokes must be tensioned to 2.5 - 3 Nm.**



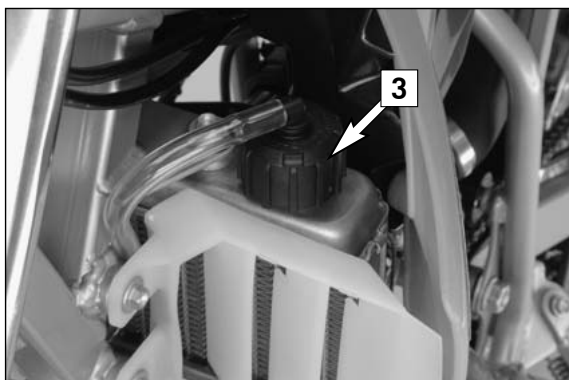
Cooling system

The water pump [1] in the engine keeps the cooling liquid in circulation. The cooling liquid is cooled by the air stream. Therefore, the cooling effect is reduced when the traveling speed is reduced. Dirty radiators additionally reduce the cooling effect.

The cooling liquid can be drained by removing screw [2] on the water-pump cover.

⚠ WARNING

Do not remove any cooler hoses or the drain screw when the engine is hot.

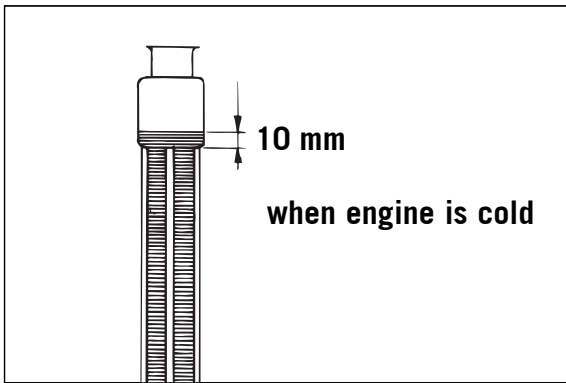


A mixture of 50 % antifreeze and 50 % distilled water is used as the cooling liquid. However, the antifreeze protection must be at least -25° C (-13° F). This mixture offers antifreeze protection but also good corrosion protection and should therefore not be replaced by pure water.

! CAUTION

For the cooling system, use only with high-grade antifreeze (Motorex Anti-Freeze). Using lower-grade antifreeze agents can cause corrosion and coolant foaming.

Pressure induced by heating of the coolant in the system is controlled by a valve in the radiator cap [3]; a water temperature rising up to 120° C (248° F) is admissible without fear of problems.

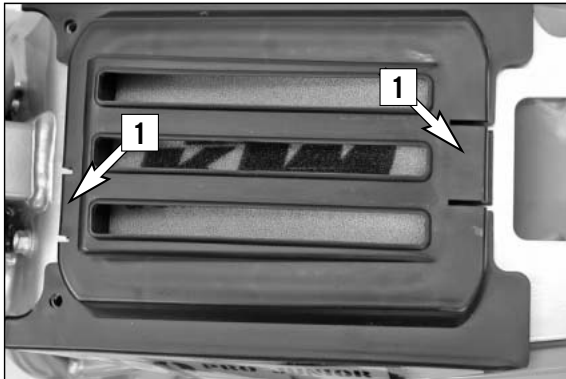


Checking coolant level

The coolant should be 10 mm (0.4 in) above the radiator fins when the engine is cold (see illustr.). In the event of the coolant being drained, always fill and bleed the system.

⚠ WARNING

If possible, always check level of cooling liquid when engine is cold. If you have to open the radiator cap when the engine is hot, use a rag to cover the cap and open slowly to release pressure.

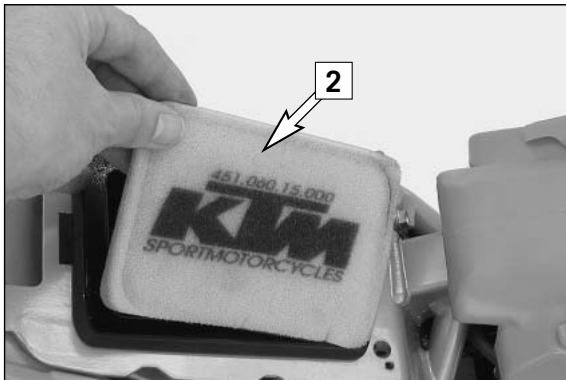


Cleaning the air filter *

The air filter must be cleaned at intervals depending on the amount of dust accumulated. To clean the air filter, first remove the seat. Then press both retaining clips [1], remove the filter holder and the air filter [2]. The air filter consists of a foam rubber insert soaked with filter oil.

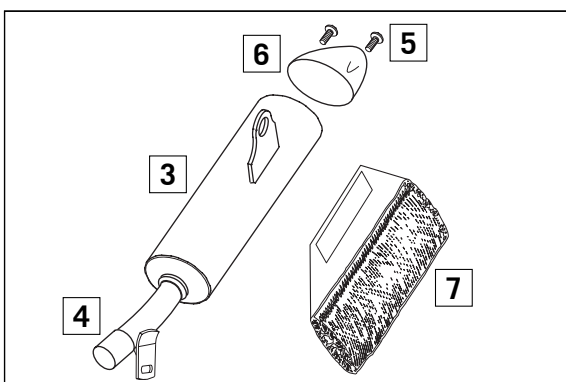
! CAUTION

- Do not clean the foam filter with fuel or petroleum since these will damage the foam. KTM recommends the products (Motorex Liquid Bio Power) for air filter maintenance.
- Never operate your motorcycle without an air filter. Otherwise, dust and dirt may get into the engine and lead to increased wear.
- The holder must retain the air filter throughout its entire circumference. If the filter has been mounted incorrectly, the engine will take in unfiltered air, thereby causing increased engine wear.



Thoroughly wash the foam filter in special cleaning fluid (Motorex Bio Dirt Remover) and allow it to dry well. Only press out the filter, do not wring it out under any circumstances. Oil the dry foam filter with a high-grade filter oil (Motorex Liquid Bio Power). Also clean the air filter box. Check carburetor collar for damage and that it is filled correctly.

Insert the air filter in the opening and fasten it with the filter holder. Then mount the seat.



Exhaust system *

The silencer is filled with glass-fiber yarn for damping. When in use, the glass-fiber yarn becomes loose or coked with oil carbon. This can lead to a power loss and a reduction of the silencer damping. The glass-fiber yarn packing can be replaced in a few easy steps.

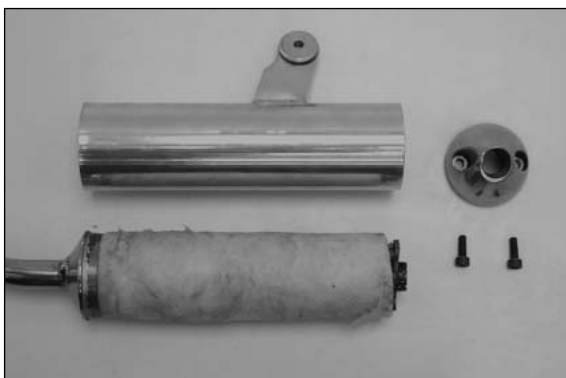
To replace, remove the silencer from the vehicle and mark the position of the outer tube [3] to the inner tube [4]. Remove screws [5] and the end cap [6]. Pull off the outer tube and remove the old glass-fiber yarn packing [7] from the inner tube. Thoroughly clean all parts.

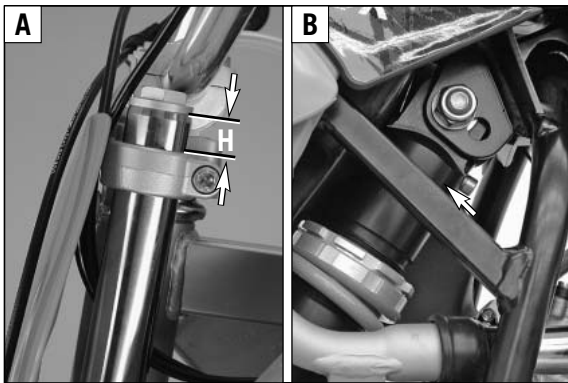
To assemble, mount a new glass-fiber yarn packing onto the inner tube (see illustration) and slide into the outer tube. Mount end cap and fix with screws [5]. Before tightening the screws, turn the outer tube until they match the positions you marked. Mount the silencer and check the exhaust system for tightness.

Note: Glass fiber yarn packages are offered by your licensed KTM dealer.

⚠ WARNING

The exhaust system becomes very hot while the motorcycle is running. to avoid burns do not start work on the exhaust system until it has properly cooled down.



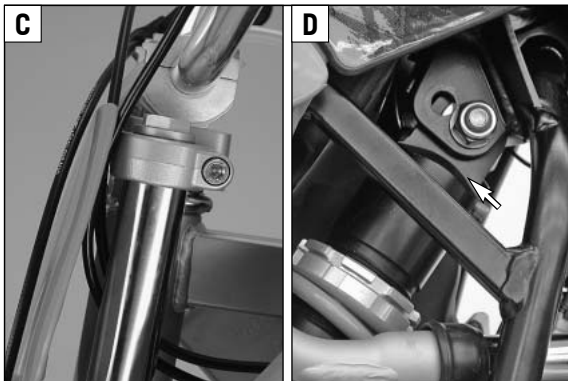


Changing the seat height

The saddle can easily be raised by 25 mm (1 in). This lets you adjust the height as your child grows.

Figures A and B show the fork and shock absorber positions for a low seat position. The fork tubes extend approx. 17 mm (0.7 in) (H) above the upper fork stabilizer. The shock absorber is attached to the upper hole in the frame. Tighten the clamp screws on the fork stabilizers to 25 Nm (top) and 10 Nm (bottom), the screw on the shock absorber to 45 Nm.

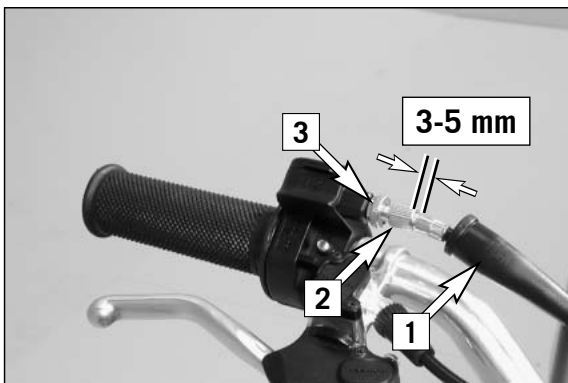
Figures A and B: low seat position
Figures C and D: high seat position



Figures C and D show the fork and shock absorber positions for a high seat position. Fork tubes are plane with top of upper fork stabilizer. (Screw cap (Aluminium) protrudes from the top of the upper fork stabilizer) The shock absorber is attached to the lower hole in the frame. Tighten the clamp screws on the fork stabilizers to 25 Nm (top) and 10 Nm (bottom), the screw on the shock absorber to 45 Nm.

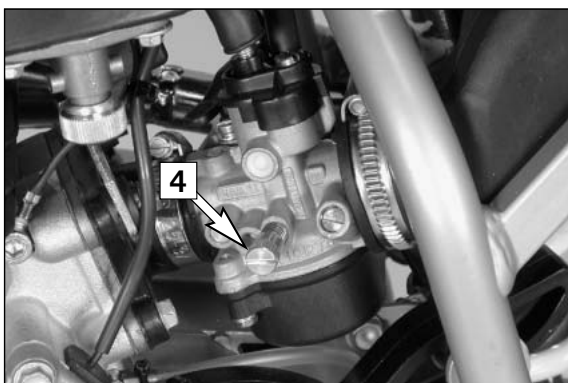
⚠ WARNING

The fork tubes may not be lowered any further than as described above, otherwise the clamping on the upper fork stabilizer will no longer be adequate.



Adjusting the throttle cable *

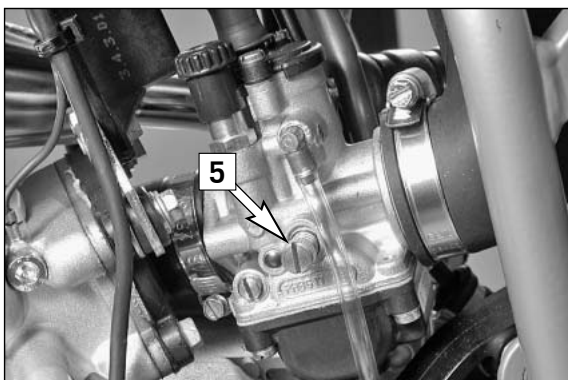
There must always be a 3 to 5 mm (0.1 to 0.2 in) play in the throttle cable. To check this, move back the protective cover [1] on the throttle grip. You must be able to lift the outer covering of the cable 3-5 mm from the adjusting screw [2], until resistance is felt. To adjust, loosen the counter nut [3] and turn the adjusting screw accordingly. Finally tighten counter nut and slide the protective cover back on.



Adjusting the idle speed (Dell'Orto PHVA 14 DS) *

The idle speed can be adjusted with screw [4].

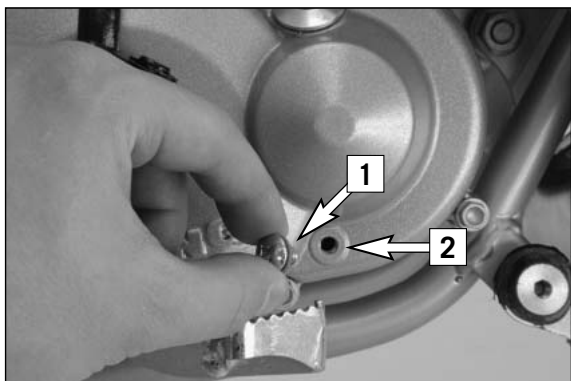
The idle speed is increased by turning clockwise.
The idle speed is reduced by turning counter-clockwise.



Adjusting the idle speed (Dell'Orto PHBG 19 BS) *

The idle speed can be adjusted with screw [5].

The idle speed is increased by turning clockwise.
The idle speed is reduced by turning counter-clockwise.

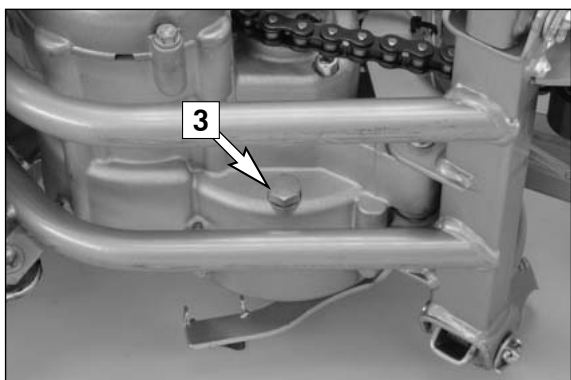


Checking the gear oil level

To check the gear oil level, first remove the plug [1]. With the motorcycle parked in an upright position, a small quantity of oil should flow out of the indicator opening [2]. If oil must be added, tilt the motorcycle and pour automatic gear oil (Motorex ATF Super) into the bore.

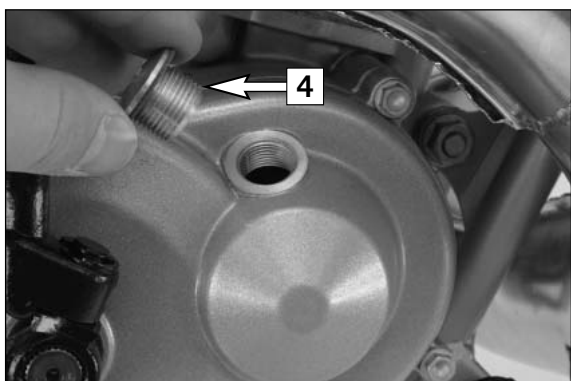
! CAUTION

Less oil or a poor oil quality lead to premature transmission wear. Therefore, only use branded products (Motorex ATF Super).



Changing gear oil *

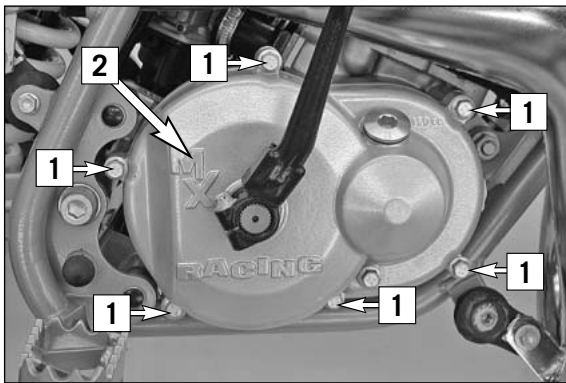
The engine must be warmed up before changing the gear oil. Park the motorcycle on a horizontal surface, remove the oil drain plug [3] and drain the used oil into an appropriate container. Clean the sealing surface, mount the oil drain plug together with the gasket and tighten to 15 Nm.



Remove stopper [4] and fill in 0.15 liters of automatic gear oil (Motorex ATF Super). Mount the stopper and check the engine for tightness.

! CAUTION

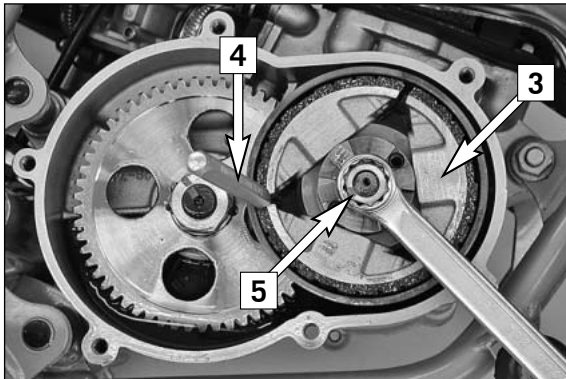
Less oil or a poor oil quality lead to premature transmission wear. Therefore, only use branded products (Motorex ATF Super).



Adjusting the centrifugal clutch *

A correctly adjusted centrifugal clutch will provide maximum engine performance and ease of driving and prevent the engine from overheating. Clutch wear can affect the clutch engagement speed.

The clutch will slip for a longer period of time at higher clutch engagement speeds, generating more frictional heat and causing the engine to overheat. If the clutch engagement speed is too low, the engine will not reach the performance range. In both cases, the engine will not seem to have enough power. Check the clutch engagement speed every 20 hours and correct if necessary or have it corrected by an authorized KTM workshop.



To tune your clutch, lay the bike on the left side. To prevent oil from leaking from the transmission vent hose, run the hose upwards and fasten. Remove the screws [1] and the clutch cover [2] and discard the gasket. Block the centrifugal clutch [3] with a suitable driver [4].

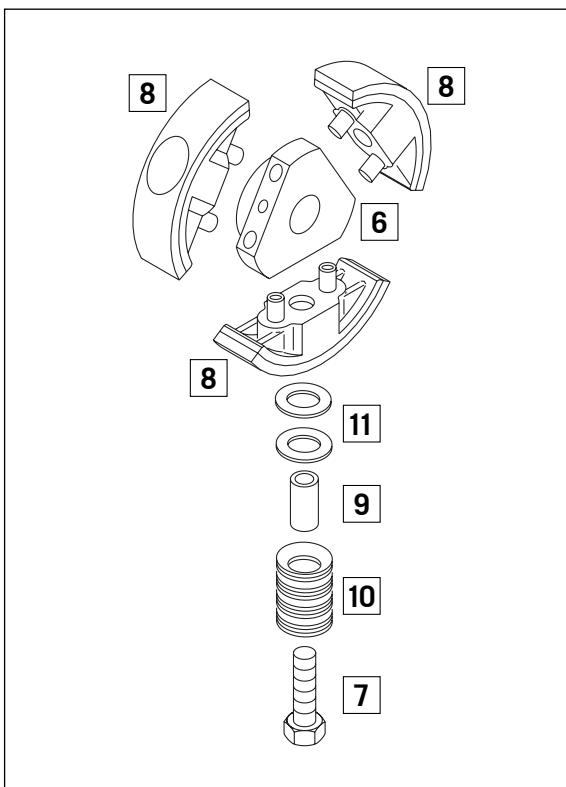
NOTE: insert the driver through both holes in the primary drive's drum and gear wheel.

Loosen the nut [5] on the clutch and pull out the driver. Remove the nut and shim from the crankshaft.



Screw the extractor (special tool item no. 590.29.021.044) onto the clutch hub [6] with the M5x50 screws, hold the extractor and remove the centrifugal clutch from the crankshaft by screwing in the extractor screw. Completely remove the centrifugal clutch, bearings and spacing washers from the crankshaft.

Loosen the HH screws [7] and remove the clutch shoes [8] from the clutch hub [6]. Remove the HH screws and bushings [9], the spring sets [10] and the disks [11] from the clutch shoes.



ADJUSTING THE CLUTCH ENGAGEMENT SPEED:

The spring sets contain 14 spring washers [12] that need to be positioned on top of each other in the order shown in the illustration [A].

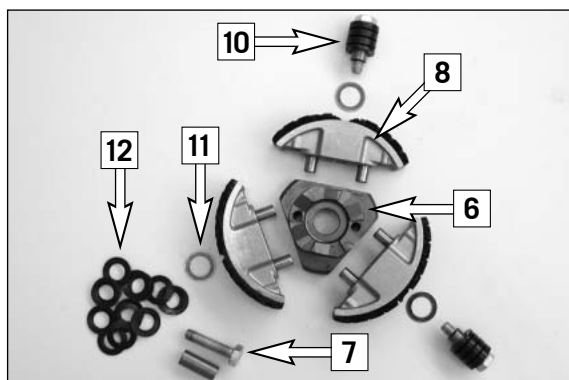
Washers are located between the spring sets and the clutch shoes to pre-tension the spring sets. You can influence the clutch engagement speed by pre-tensioning the spring set. 0.5 mm more pretension will increase the clutch engagement speed by approx. 500 rpm.

The clutch engagement speed is the speed at which the clutch begins to engage and the motorcycle starts to drive off. The clutch engagement speed is 8500-9000 rpm for the 50 LC engine.

NOTE: a tachometer (special tool item no. 451.29.075.000) to test the clutch engagement speed is available from your KTM dealer.

Make sure the spring sets are not soiled during service or repair work to the clutch since this can cause them to malfunction.

MAINTENANCE WORK ON CHASSIS AND ENGINE »



CORRECTING CLUTCH WEAR:

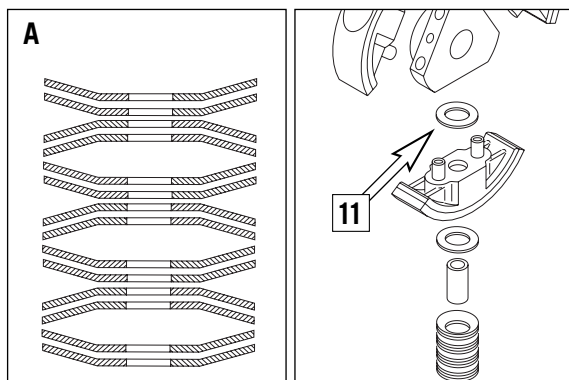
Check the clutch shoes for wear. If the surface is only slightly worn you can remount them again.

NOTE: The centrifugal clutch has an outer diameter of approx. 82.5 mm when new.

To correct slight wear to the surface, you can insert one of the pretensioning disks [11] from each clutch spring between the clutch hub and the clutch shoes – see illustration.

If only one disk is installed, you can go ahead and use it.

The inner diameter of the centrifugal clutch drum may not exceed 84.4 mm (new condition 84.0 mm).



Assemble in the reverse order.

Apply Loctite 243 to the HH screws [7] and tighten to 12 Nm.

Apply Loctite 243 to the M10x1.25 nut [5] on the crankshaft and tighten to 35 Nm.

Mount a new gasket and position the clutch cover [2].

Screw on the clutch cover with 6 M6x25 screws [1] and tighten to 10 Nm.

Move the transmission vent hose back in the original position.

TROUBLE SHOOTING »

If you let the specified maintenance work on your motorcycle be carried out, disturbances can hardly be expected. Should an error occur nevertheless, we advise you to use the trouble shooting chart in order to find the cause of error. We would like to point out that many operations cannot be performed by oneself. In case of uncertainty, please contact a KTM-dealer.

TROUBLE	CAUSE	REMEDY
Engine fails to start	Operating error	Open fuel tap, replenish fuel, do not use choke
	The motorcycle was not driven for a longer period of time, leaving old fuel in the float chamber	The highly inflammable components in modern fuels volatilize if left standing for longer periods of time. If the motorcycle has not been used for over 1 week, the fuel should be drained from the float chamber. The engine will start up immediately if the float chamber is filled with fresh, ignitable fuel
	Fuel supply interrupted	Close fuel tap, loosen fuel hose at carburettor, lead into a basin and open fuel tap, <ul style="list-style-type: none"> – if fuel leaks out, clean carburettor – if no fuel leaks out, check tank ventilation, i.e. clean fuel tap
	Electrode distance too large	Reduce electrode distance (0.60 mm)
	Plug fouled by oil, wet or bridged	Clean spark plug or renew
	Ignition wire or spark plug connector damaged	Dismount spark plug, connect ignition cable, hold to ground (blank place on engine) and actuate kickstarter, a strong spark must be produced at the spark plug <ul style="list-style-type: none"> – If no spark is produced, loosen spark plug cap from ignition cable, hold about 5 mm from ground and actuate kickstarter – If a spark now occurs, replace spark plug cap – If no spark is produced, control ignition system
	Kill button wire or short-circuit switch faulty	Disconnect black coloured cable from short circuit button at ignition coil and check ignition spark. If the spark is O.K. repair defective part of cable or ignition switch
	Loose ignition cable connectors	Inspect cable connectors
	Spark too weak	Examine ignition system
Engine without idle running	Idle adjusting screw out of adjustment	Readjust idle running or replace idle adjusting screw
	Ignition system damaged	Examine ignition system
	Wear	Overhaul engine
Less power of engine	Air filter obstructed	Clean or renew airfilter
	Fuel supply partly interrupted or blocked	Blow through fuel pipe and clean carburetor
	Loss of compression due to loose spark plug	Tighten spark plug
	Exhaust system damaged	Check exhaust system for damage
	Engine has not enough preignition	Check and adjust ignition
	Reed paddles tensionless or damaged, surface of reed valve housing damaged	Replace reed paddles or reed valve housing
	Wear	Overhaul engine

TROUBLE SHOOTING »

TROUBLE	CAUSE	REMEDY
Engine stalling or running with four stroke cycle	Carburetor overflows if level adjust too high, float needle seating is dirty or enlarged	Clean carburetor, if necessary replace float needle and adjust level
	Loose carburetor jets	Tighten jets
High rpm misfiring	Incorrect heat range spark plug or low quality spark plug	Refer to technical data section
	Loose, corroded or non conductive ignition socket connector	Check and seal with silicon
Engine splutters into the carburetor	Lack of fuel	Clean fuel pipes, examine tank aeration and clean
	Spark plug with incorrect heat value (Ignition by incandescence)	Fit correct spark plug
	Engine takes air out of control	Check intake flange and carburettor if firmly setted
Engine overheating	Insufficient liquid in cooling system	Top up coolant and bleed cooling system check cooling system for leaks
	Radiator fins clogged	Clean radiator fins with water jet
	Frothing in cooling system	Renew coolant using branded anti-freeze/anti-corrosive (Motorex Anti-Freeze)
	The motorcycle is being driven too slowly, the clutch keeps slipping, causing heat to develop	Drive the motorcycle faster or reduce the preload on the clutch springs
	Pinched or kinked water hoses	Replace with correct routed hoses
	Incorrect ignition timing because of loose stator screws	Readjust to correct ignition timing specifications, secure screws with Loctite 243
	Incorrect compression ratio	Measure and adjust compression ratio
Emission of white smoke (steam)	Cylinder head or O-ring of cylinder head gasket leaks	Check cylinder head, replace O-ring
Excessive oil escapes from transmission breather tube	Excessive oil quantity in transmission	Correct transmission oil level

CLEANING »

Clean your motorcycle regularly in order to keep its painted finish looking shiny and new.

The best manner would be to use warm water that has been mixed with a commercially available washing detergent and a sponge. The hard dirt can be removed before with the help of a soft water jet.

! CAUTION

Never clean your motorcycle with a high-pressured cleaner or a high-pressured water jet, otherwise the water might run into the electrical components, connectors, sheathed cables, bearings, carburetor etc. and cause malfunctions, i.e., lead to the premature destruction of these parts.

- You should use commercially available detergents to clean the motorcycle. Heavily soiled parts should also be cleaned with the help of a paint brush.
- Before cleaning with water, plug the exhaust pipe to prevent water ingress.
- After the motorcycle has been rinsed with a soft water jet, it should be dried by air pressure and a cloth. Then take a short drive until the engine has reached its operating temperature, and also operate the brakes. The heat also causes the water at the inaccessible parts of the engine and the brakes to evaporate.
- Slide back the protective covers on the handlebar-mounted instruments so that any water that may have seeped into this part of the motorcycle is allowed to evaporate.
- After the motorcycle has cooled down, oil and grease all the gliding bearing parts. Also treat the chain with a chain spray.
- To prevent failures in the electric system, you should treat the short circuit button with a contact spray.

STORAGE »

If you want to put your motorcycle away for longer periods of time, please observe the following instructions:

- Clean motorcycle thoroughly (see chapter: CLEANING)
- Change engine oil (old engine oil contains aggressive contaminations).
- Check antifreeze and amount of cooling liquid.
- the engine warm up again, close fuel tap and wait until the engine dies off by itself. In this way, the carburetor jets are prevented from becoming resin-clogged by the old fuel.
- Remove spark plug and fill in approx. 5 cc of engine oil into the cylinder through the opening. Actuate kickstarter 10 times in order to distribute the oil onto the cylinder walls and mount the spark plug.
- Let fuel flow out of tank into an appropriate basin.
- Correct tire pressure.
- Lubricate bearing points of the control levers, footrests, etc. as well as the chain.
- The storage place should be dry and not be subjected to overly great temperature fluctuations.
- Cover the motorcycle with an air permeable tarpaulin or blanket. Do not use airtight materials, as possible humidity might not be able to escape and thereby cause corrosion.

! CAUTION

It would be very bad to let the engine run for a short time during the storage period. The engine would not get warmed up enough and the thus developed steam would condense during the combustion process and cause the exhaust to rust.

USE AFTER PERIOD OF STORAGE

- Fill up tank with fresh fuel.
- Check motorcycle as before each start (see driving instructions).
- Take a short, careful test ride first.

NOTE: Before you put your motorcycle away for the winter, you should check all parts for their function and wear. Should any service jobs, repairs, or any refitting be necessary, you should have them carried out during the off-season (lower workload at mechanics' shops). This way, you can avoid the long waiting times at your shop at the beginning of the next biking season.

TECHNICAL DATA – ENGINE »

ENGINE	50 SX JUNIOR	50 SX
Design	single cylinder 2-stroke engine, with reed valve inlet	
Displacement	49.0 cc	
Bore/Stroke	39.5 / 40 mm	
Fuel	SUPER fuel, research octane no 95, mixed with 2-stroke oil	
Oil/gasoline ratio	1 : 60 when using high grade 2-stroke oil (Motorex 2T Cross Power) When in doubt, please contact your importer	
Lubrication	mixture lubrication	
Crankshaft bearing	2 grooved ball bearing	
Connecting rod bearing	needle bearing	
Piston pin bearing	needle bearing	
Piston rings	1 rectangular ring	
Primary drive	straight cut spur gears, 16 : 57 Z	
Transmission oil	0.15-0,2 liter automatic gear oil Dexron II (Motorex Toppspeed 4T 15W50)	
Spark plug	NGK BR 8 ECM	
Electrode gap	0.6 mm	
Carburetor	Dell'Orto PHVA 14 DS	Dell'Orto PHBG 19 BS
Air filter	wet foam type air filter insert	
Cooling liquid	0.5 litres, 50% antifreeze, 50% distilled water, at least -25 °C (-13 °F)	

BASIC CARBURETOR SETTING		
Model	50 SX Junior	50 SX
Type	Dell'Orto PHVA 14 DS	Dell'Orto PHBG 19 BS
Main jet	80	85
Needle jet	211 FA	260 AU
Idling jet	45	48
Jet needle	A10	W9
Needle position from top	3.	3.
Air/Mixture reg. screw open	3.5	3.0
Slide	40	60
Starting jet	60	60

TIGHTENING TORQUES - ENGINE		
Primary gear nut	M14x1,25	40 Nm
Hexagon nut ignition rotor	M10x1,25	20 Nm
Nut of clutch hub	M10x1,25	Loctite 243 + 35 Nm
Cylinder head screws	M7	15 Nm
Cylinder base nuts	M8	18 Nm
Allan head screw-Stator	M5x25	Loctite 243 + 8 Nm
Oil plug	M16	5 Nm
Oil drain plug	M10	15 Nm
Other engine screws	M5	7 Nm
	M6	10 Nm
	M8	30 Nm

TECHNICAL SPECIFICATIONS - CHASSIS »

CHASSIS	50 SX JUNIOR	50 SX
Frame	single downtube, split-cradle	
Fork	Marzocchi Ø = 32 mm	
Wheel travel front/rear	140/205 mm (5.5/8 in)	185/185 mm (7.3/7.3 in)
Rear suspension	Central shock absorber WP	
Front brake	Disk brake Ø 160 mm (6.4 in)	
Rear brake	Drum brake Ø 90 mm (3.5 in)	Disk brake Ø 140 mm (5.5 in)
Tires front	Pirelli 2.50-10 33J MT32A	Pirelli 60/100-12 36M MT32A
Tires rear	Pirelli 2.75-10 37J MT320	Pirelli 2.75-10 37J MT320
Tire pressure	front/rear: 1.0 bar	
Fuel tank capacity	1.8 Liters	
Final drive ratio	11 : 48	10 : 44
Chain	1/2x3/16" 96 rolls	1/2x3/16" 102 rolls
Steering angle	66°	
Wheel base	910 mm (35.8 in)	1030 mm (40 in)
Seat height, unloaded	585 mm/610 mm (23/24 in)	650/675 mm (25.6/26.6 in)
Ground clearance	220 mm (8.6 in)	255 mm (10 in)
Rider's body height	max. 130 cm (51 in)	
Rider's body weight	max. 35 kg (78 lbs)	
Recommended age of rider	4-7 years	6-10 years
Engine	50 LC	

TIGHTENING TORQUES		
Hexagon nuts front/rear axle	M12x1	40 Nm
Hexagon nut swing arm bolt	M12	45 Nm
Clamping screw upper fork bridge	M8	25 Nm
Clamping screw lower fork bridge	M6	10 Nm
Screws handlebar clamp	M8	20 Nm
Shock absorber top/bottom	M10	45 Nm
Allan screw – Handlebar support	M10	Loctite 243 + 40 Nm
Front brake caliper	M8	Loctite 243 + 20 Nm
Front/rear brake disk	M6	Loctite 243 + 15 Nm
Spoke nipple	M4	2.5 - 3 Nm
Other chassis screws	M5	6 Nm
	M6	10 Nm
	M8	25 Nm
	M10	45 Nm

STANDARD-ADJUSTMENT – FORK	
Spring	2,0 N/mm
Preload	10 mm (0.4 in)
Fork oil	SAE 7,5
Air chamber length	110 mm (4.3 in)

STANDARD ADJUSTMENT - SHOCK ABSORBER		
	50 SX Junior WP 03189C01	50 SX WP 03189C02
Rebound adjuster	12	10
Spring	75 N/mm	35 N/mm
Spring preload	5 mm (0.2 in)	3 mm (0.12 in)

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KTM Group Partner



KTM-Sportmotorcycle AG
A-5230 Mattighofen
www.ktm.at

OWNER'S MANUAL 2008

50 MINI ADVENTURE 50 MINI SX

3211221en



Now you own a modern motorcycle that you and your youngster will certainly enjoy, provided that you service and maintain it properly.

Please insert the serial numbers of the motorcycle below

Chassis number

Engine number

Stamp of dealer

All information contained is without obligation. KTM-Sportmotorcycle AG particularly reserves the right to modify any equipment, technical specifications, prices, colors, shapes, materials, services, service work, constructions, equipment and the like so as to adapt them to local conditions or to cancel any of the above items, all without previous announcement and without giving reasons. KTM may stop manufacturing certain models without previous notice. KTM shall not be held liable for any deviations of availability and/or ability to deliver, illustrations, descriptions, printing and/or other errors. The illustrated models partly contain extra equipment, which is not applied to standard models.

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In accordance with the international quality management ISO 9001 standard, KTM uses quality assurance processes that lead to the highest possible product quality.

INTENDED PURPOSE

KTM mini-sports motorcycles are designed and constructed to resist the usual wear and tear of normal use in competitions.

The motorcycles comply with the regulations and categories currently in effect with the leading international motorcycle associations.

OWNER'S MANUAL

Please read this manual thoroughly before letting your youngster ride the motorcycle for the first time. This manual contains important information and recommendations that will help you and your youngster to operate and handle the motorcycle properly. In the interest of everybody involved, we urge you to pay particular attention to instructions and information marked as follows:

WARNING

- Ignoring these instructions can be dangerous to life and limb!

CAUTION

- Ignoring these instructions may damage parts of the motorcycle or impair the motorcycle's traffic safety!

This manual contains important information on the operation and maintenance of your new KTM motorcycle. It went to press describing your model's latest state of development. Nevertheless, the descriptions may deviate slightly from the current design as our motorcycles are permanently improved. The Owner's Manual is an integral part of the motorcycle and must be handed over to the new owner when the motorcycle is sold.

SERVICE

Observance of the service, maintenance and tuning instructions for the engine and chassis specified in the Owner's Manual is a prerequisite for faultless operation and the avoidance of premature wear. An improperly tuned chassis can lead to damage and breakage of the chassis components (see chapter on checking the basic chassis setting).

The use of the motorcycle under extreme conditions, e.g. on extremely muddy and wet terrain, can lead to higher than average wear on components such as the drive train or the brakes. In this case it may become necessary to service or replace wear parts before the service limit specified in the maintenance schedule has been reached.

We expressly point out that work marked with an asterisk (*) in the chapter "Maintenance work on the chassis and engine" must be performed by a KTM workshop. If maintenance work should become necessary during a competition, it must be performed by a trained mechanic.

Please strictly observe the prescribed running-in periods and inspection and maintenance intervals. Compliance with these instructions will significantly prolong the life of your motorcycle.

WARRANTY

The service work specified in the "Lubrication and Maintenance Schedule" must be performed by a KTM workshop and recorded in the service manual otherwise claims under the warranty shall become void. No claims can be filed under the warranty for damage or consequential damage caused by manipulations or conversions to the motorcycle.

AUTOMOTIVE FLUIDS

The fuels and lubricants specified in the Owner's Manual or automotive fluids with equivalent specifications must be used in accordance with the maintenance schedule.

SPARE PARTS, ACCESSORIES

For the safety of your child, only use spare parts and accessories approved by KTM. KTM shall not assume any liability for other products or consequential damage resulting from the use of such products.

When special needs arise, please contact a KTM dealer, who will seek the assistance of the KTM importer if necessary.

SAFETY

Parents should keep in mind that the safety of their youngsters always depends on the efforts made by the parents to ensure that the motorcycle is kept in good working order and only used on safe terrains. Nevertheless, driving the motorcycle, like driving any other vehicle, involves a potential risk. Therefore, please make sure that all fundamental precautions are taken. Please also read the „INFORMATION ON SAFE DRIVING FOR PARENTS“ on page 4.

TRANSPORT

When transporting your motorcycle, secure it with elastic straps or other mechanical devices in an upright position. Be sure that the fuel tap is closed. If the motorcycle topples over, fuel can flow out of the carburetor or fuel tank.

ENVIRONMENT

Riding an off-highway motorcycle is a wonderful form of outdoor recreation and we certainly hope that you and your youngsters will enjoy it to the full. However, this enjoyable outdoor activity can cause environmental problems or lead to conflicts with other people. Responsible use of the motorcycle will prevent such problems and conflicts. You can contribute to securing the future of motorcycling by making sure that you and your youngsters only use the motorcycle within the limits established by the applicable laws, making environmental protection one of your top priorities and never violating other people's rights.

In this spirit, we hope that you and your youngsters will always safely enjoy your motorcycle!

KTM-SPORTMOTORCYCLE AG
5230 MATTIGHOFEN, AUSTRIA

Attachments: 1 spare parts manual chassis & engine



KTM mini motorcycles are off-road motorcycles designed for one person only. They are not allowed on public roads.

The vehicle dimensions and components are designed for children from 4 to 6 years of age with a maximum weight of 35 kg (78 lbs) and a maximum height of 130 cm (51 in).

- Have your youngster wear proper protective gear whenever he or she rides the motorcycle: helmet, eye protection, chest, back, arm and leg protectors, gloves and boots. To set a good example, be sure to wear protective gear yourself whenever riding a motorcycle!
- Before your youngster takes his or her first ride, explain how each of the controls works and check if your youngster has understood what you explained. We recommend to review the entire owner's manual with your youngster item by item, paying particular attention to the specially marked warnings and pointing out the danger of injury.
- Instruct your youngster about riding and falling techniques, explain how the motorcycle will respond to shifting of the rider's weight, etc.
- Before starting the motorcycle for the first time check whether the basic fork and shock absorber settings are suitable for your child's weight (see chapter on checking the basic chassis setting).
- Before using the motorcycle you should always check all components for proper operation (see maintenance schedule). Have your youngster perform these technical checks himself / herself as well.
- Whenever you go for a ride with your youngster, keep in mind that the speed should be adjusted to your youngster and not the other way around.
- Your youngster must understand that all instructions he or she receives from you or any other supervising adult must be followed.
- Your child must be physically ready to ride a motorcycle. This means that he or she must at least be able to ride a bicycle. Being good at sports that require fast reactions is an additional advantage. Your youngster should be strong enough to pick up the motorcycle after a fall.
- Never demand too much of your youngster. Give him or her time to get used to the motorcycle and to improve his / her riding skills. Do not even consider letting your youngster participate in a race before his / her physical condition, riding skills and motivation have sufficiently developed.
- Explain to your youngster that he / she should always adjust his / her riding speed to the local conditions as well as to his / her own riding skills and that excessive speed can cause falls and severe injuries. Always keep in mind that youngsters tend to underestimate dangers or fail to recognize them altogether. The riding speed must be reduced, in particular, on unknown terrain.
- Never let your youngster ride the motorcycle without supervision. An adult should always be present.
- The motorcycle is designed for one rider only. Your youngster is not allowed to transport a passenger.
- When you go for a ride, somebody at home should always know where you are going and when you will be back. This makes it easier to send you help, should problems occur.

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SERIAL NUMBER LOCATIONS »



Chassis number

The chassis number is located on the type plate on the steering head. Enter this number in the field on page no 1.



Engine number

The engine number is stamped into the right half of the engine case next to the kickstarter. Enter this number in the relevant field on page 1.

OPERATION INSTRUMENTS »



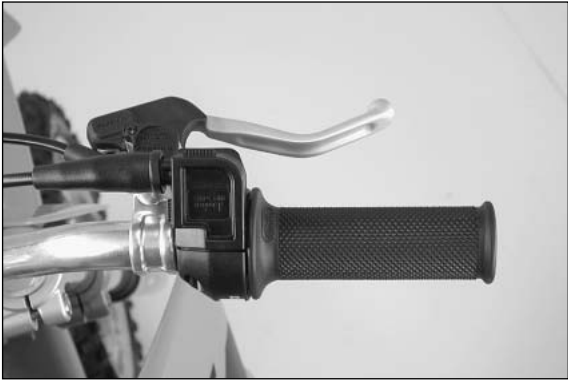
Throttle grip

The throttle grip is located on the right side of the handlebars. It is used to reduce the engine speed and, thus, the driving speed.



Right hand brake lever (50 Mini Adventure)

The right hand brake lever is used to operate the front wheel brake via a control cable.



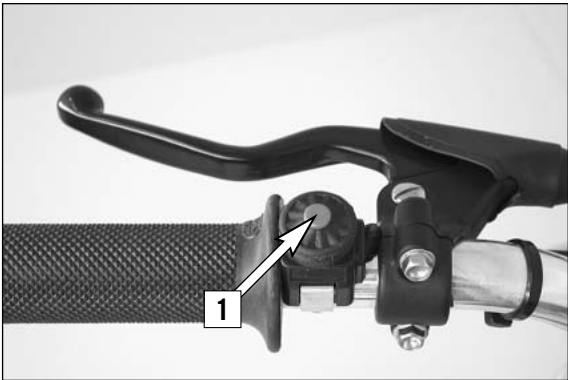
Hand brake lever (50 Mini SX)

The hand brake lever is located on the right side of the handlebars and actuates the front wheel brake. The basic position can be adjusted to fit your child's hand.



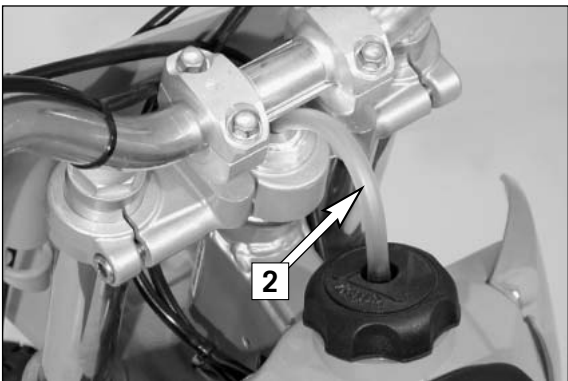
Left hand brake lever

The left hand brake lever is used to operate the rear wheel brake via a control cable.



Short circuit button

The short circuit button [1] turns off the engine. When pressing this button, the ignition circuit is short-circuited.



Filler cap

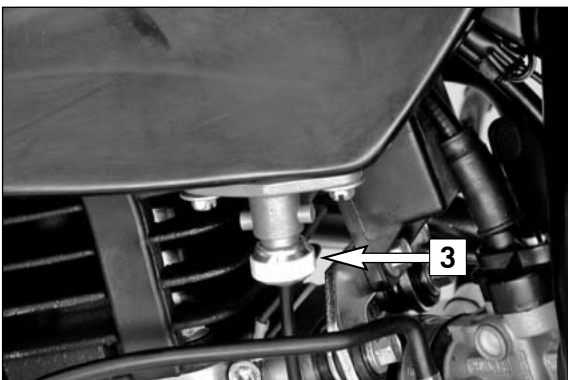
To open it:

Turn filler cap counter-clockwise.

To close it:

Put filler cap back on and tighten it by turning it clockwise.

Install tank breather hose [2] without kinks.



Fuel tap

The fuel tap [3] is located at the front of the motorcycle on the left side of the tank.

Opening the fuel tap:

Turn the knob all the way to the left.

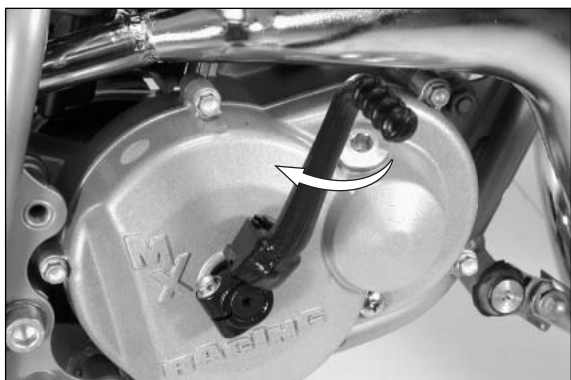
Closing the fuel tap:

Turn the knob all the way to the right.



Choke

The choke lever [1] is located on the right side of the carburetor. When pulling the choke lever fully towards the top, a bore is opened in the carburetor. Through this bore the engine can take in additional fuel. This results in a rich fuel-air mixture that is needed for a cold start. When pressing the choke lever downward in the carburetor, the bore is closed again.



Kickstarter

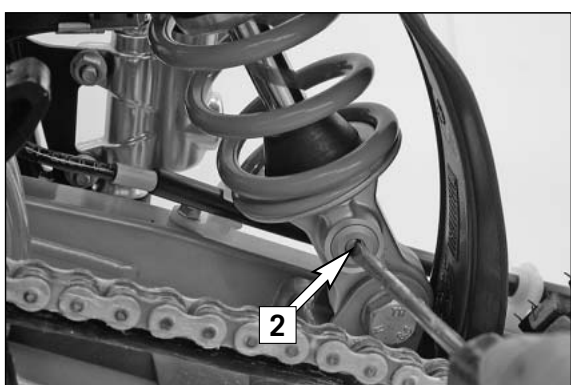
The kickstarter is mounted on the right side of the engine. Its upper part can be swivelled.

NOTE: an accessory kit for kickstarter backwards operation is available.



Side stand

Use your foot to swing the side stand forwards to the stop. Make sure it rests securely on solid ground.



Rebound damping function of the shock absorber

By using the adjusting screw [2], the degree of damping of the rebound can be adjusted. Turn the knob clockwise to increase damping, turn it counterclockwise to reduce damping during rebounding.

STANDARD ADJUSTMENT:

- turn the adjusting screw clockwise to the stop.
- then turn the adjusting screw counterclockwise 12 clicks.

⚠ WARNING

- Never turn the setting wheel more than two clicks between two test rides.
- Do not try to disassemble the shock absorber or to perform maintenance work yourself. Danger of injury!



Instructions for the first ride

- Make sure the work for the „pre-delivery inspection“ was performed by your authorized KTM workshop. The DELIVERY CERTIFICATE and SERVICE MANUAL will be handed over when you pick up your vehicle.
- Please note that this model has SEPARATE LUBRICATION (see page 13)
- Before your youngster takes his or her first ride, explain how each of the controls works and check if your youngster has understood what you explained. We recommend to review the entire owner's manual with your youngster item by item, paying particular attention to the specially marked warnings and pointing out the danger of injury.
- Adjust the basic hand brake lever position to your youngster's hand size. Your youngster should, of course, wear gloves!
- To prevent injury, teach your youngster the basic riding skills on soft ground, e.g. on a meadow or in the garden. Be sure that there is room enough to maneuver, and that no other riders are close.
- To ensure that your youngster gets the feel of the brakes, have your youngster operate the brakes while you push the motorcycle. Do not start the engine before your youngster has learned to apply both brakes with appropriate pressure.
- Now your youngster must get the feel of the throttle. Start the engine, hold the motorcycle and have your youngster slowly open the throttle. Then, your youngster can take his/her first ride. Initially, your youngster should ride back and forth between two persons who help the young rider to stop the motorcycle. However, you should also teach your youngster how to stop the motorcycle himself/herself.
- To improve his/her riding skills, your youngster should practice riding the motorcycle standing on the footpegs or riding at the slowest possible speed. Additionally, you can arrange a series of obstacles and have your youngster drive around them, etc. Tell your youngster to look 3-10 m ahead, depending on the speed, to recognize and avoid obstacles. When riding through curves, the rider should also look far ahead into the curve.
- Pay attention to running-in procedure.

Running in

- Even very precisely machined sections of engine components have rougher surfaces than components which have been sliding across one another for quite some time. Therefore, every engine needs to be broken in. For this reason, during its first 5 hours the engine must not be revved up to its performance limits.
- Apply low but changing loads for running-in.
- DO NOT DRIVE AT FULL LOAD FOR THE FIRST 5 HOURS!

⚠ WARNING

- Have your youngster wear proper protective gear whenever he or she rides the motorcycle: helmet, eye protection, chest, back, arm and leg protectors, gloves and boots. To set a good example, be sure to wear protective gear yourself whenever riding a motorcycle!
- The motorcycle has a centrifugal clutch. The motorcycle begins to move as soon as the throttle is opened.
- Always apply the front brake when starting the engine and release the brake slowly when the engine is running. An activated choke increases the idle speed of the engine, the centrifugal clutch thus beginning to engage. Therefore, the motorcycle can begin to move when the brake levers are released.
- When the engine speed drops to the level at which the centrifugal clutch disengages, braking with the engine is no longer possible and the motorcycle can only be slowed down using the brakes.
- Your child should never drive faster than its skills and the terrain permit.
- Never let your child drive its motorcycle unchaperoned.
- Replace the helmet visor or goggle glasses early enough. When light shines directly on a scratched visor or goggles, you will be practically blind.
- Only use accessory parts recommended by KTM.
- Never leave your motorcycle without supervision as long as the engine is running.
- KTM mini models are designed for one person only. Passengers are not allowed.
- These models do not comply with the regulations and safety standards established by the law. Therefore, they are not permitted on public roads.
- Always keep in mind that other people feel molested by excessive noise.



What you should check before each start

When you start off, the motorcycle must be in a perfect technical condition. For safety reasons, you should make it a habit to perform an overall check of your motorcycle before each start.

The following checks should be performed:

1 CHECK TRANSMISSION OIL LEVEL

A lack of gear oil leads to premature wear and finally results in destruction of the gear wheels.

2 FUEL

Check that there is sufficient fuel in the tank; when closing the filler cap, check that the tank venting hose is free of kinks.

3 CHAIN

A loose chain may fall off the chain wheels; an extremely worn chain may tear, and insufficient lubrication may result in unnecessary wear of the chain and chain wheels.

4 TIRES

Check for damaged tires. Tires showing cuts or dents must be replaced. Also check the air pressure. Insufficient tread and incorrect air pressure deteriorate the driving performance.

5 THROTTLE CABLE

Check the throttle cable for proper adjustment and smooth operation.

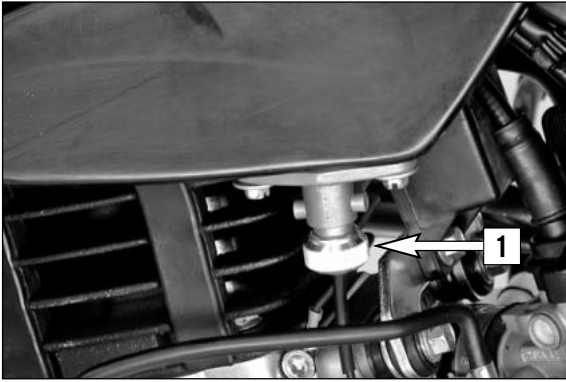
6 BRAKES

Check the brakes for proper adjustment and correct operation. Check the brake fluid level for the disk brake (50 Mini SX).

7 OIL TANK

Check the oil level in the tank. A shortage of two-stroke engine oil will lead to engine damage.





Starting when the engine is cold

- 1 Open fuel tap [1].
- 2 Operate the choke [2].
- 3 Swing the side stand all the way up.
- 4 Squeeze both brake levers.
- 5 Operate the kickstarter, depressing it all the way, without opening the throttle.

⚠ WARNING

- When starting the engine, put on motorcycle boots in order to avoid injuries. You may slip off the kickstarter, or the engine may kick back if you do not kick hard enough.
- Do not start the engine and allow it to idle in a closed area. Exhaust fumes are poisonous and can cause loss of consciousness and death. Always provide adequate ventilation while the engine is running.
- Never tilt the motorcycle over the side stand to warm up the engine. The side stand could fold away and the motorcycle run out of control.

! CAUTION

Driving a cold engine at high speed will reduce the life of the engine. We recommend to warm the engine up at a medium engine speed for several minutes before switching to full load.

Note: If you have trouble starting the motorcycle, this could be due to old fuel in the float chamber. The easily inflammable components of the new fuels evaporate during longer periods of standstill. When the motorcycle has been out of operation for more than a week, it is therefore recommended to drain the old fuel from the float chamber. The engine will immediately start off when the float chamber is filled with new fuel.

Starting when the engine is warm

- 1 Open fuel tap [1].
- 2 Swing the side stand all the way up.
- 3 Squeeze both brake levers.
- 4 Operate the kickstarter, depressing it all the way, without opening the throttle.

What to do when the engine is „flooded“

- 1 Close fuel tap [1].
- 2 Squeeze both brake levers.
- 3 Start engine with full throttle. If necessary, unscrew spark plug and dry it.
- 4 Once the engine is running, open fuel tap again.

Starting off

Slowly release the brake lever while simultaneously opening the throttle.

⚠ WARNING

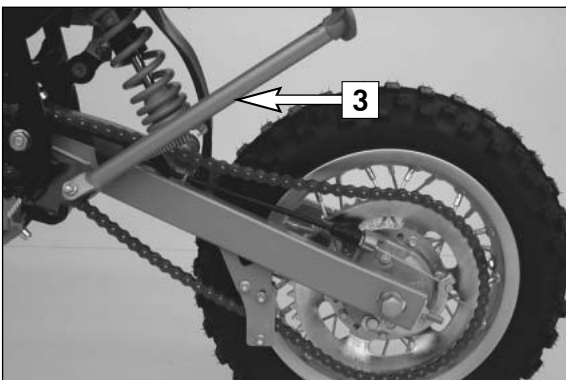
Always make sure the side stand [3] is kicked all the way up before you let your child drive off. If the stand drags on the floor, you may lose control of your motorcycle.

Driving

The engine speed, and thus the driving speed, are regulated by the throttle grip. The choke must always be deactivated as soon as the engine has warmed up.

! CAUTION

- In the event that, while your child is riding on the motorcycle, you notice any unusual operation-related noise, your child should stop immediately, turn the engine off, and contact an authorized KTM dealer.
- After falling with the motorcycle, check all its functions thoroughly before using it again.
- A bent handlebar must always be replaced. Never try to straighten the handlebar because this will cause it to lose its stability.





Braking

Close the throttle and squeeze both brake levers simultaneously. On sandy, wet or slippery terrain the rear wheel brake should be preferred. The brakes should always be operated carefully as locking wheels can cause skidding or falls.

⚠ WARNING

- Brake drum and linings heat up during brake operation, thus reducing the effect of the brakes.
- Wet brakes have reduced brake performance, therefore be sure to brake them dry after cleaning.
- If the resistance of the hand brake lever feels unresponsive, something is wrong with the brake system. Have the brake system checked at a KTM workshop before you let your child drive the motorcycle.

Stopping

Reduce the speed. Immediately before the motorcycle comes to a stop, put the left foot down. To turn off the engine, press the short circuit button until the engine stops. Close the fuel tap.

⚠ WARNING

Motorcycles produce great heat during operation. Therefore, keep in mind that the engine, the exhaust system and the brakes can heat up considerably. Make sure that these parts are not touched and always take care, when parking the motorcycle, that other persons will not burn themselves.

! CAUTION

- Close the fuel tap when leaving the motorcycle. Otherwise the carburetor may get flooded and fuel will enter the engine.
- The side stand is only designed for the weight of the motorcycle. If you get on the motorcycle and thus put additional weight on the side stand, the side stand or the frame can be damaged and the motorcycle may fall on the side.

Refuelling, fuel

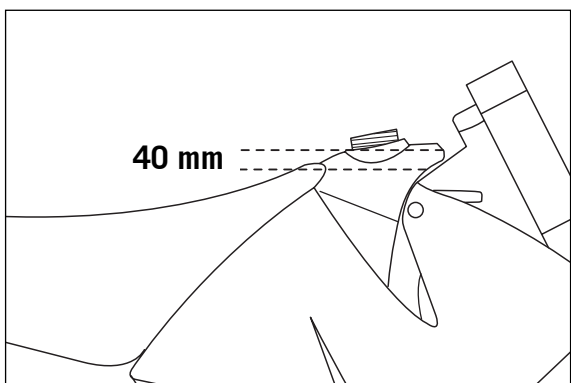
Refuel with pure fuel (RON 95) for separate lubrication.

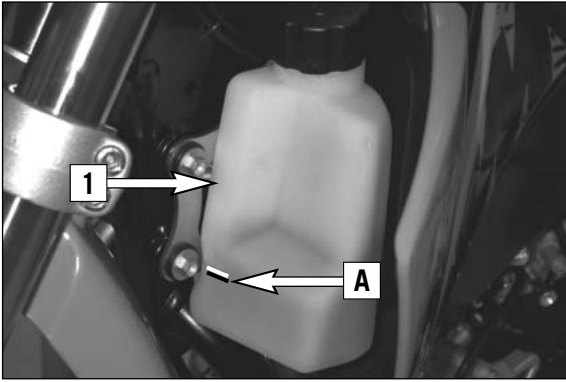
⚠ WARNING

Gasoline is highly flammable and poisonous. Extreme caution should be used when handling gasoline. Never refuel the motorcycle near open flames or burning cigarettes. Always switch off the engine before refueling. Be careful not to spill gasoline on the engine or exhaust pipe while the engine is hot. Wipe up spills promptly. If gasoline is swallowed or splashed in the eyes, seek a doctor's advice immediately.

! CAUTION

- Only use premium-grade gasoline RON 95. Other types of gasoline can cause engine failure.
- Only use known brands of high-grade 2-stroke engine oil.
- Not enough oil or low-grade oil can cause erosion of the piston. When using too much oil, the engine may start smoking and foul the spark plug.
- Fuel expands when its temperature rises. Therefore do not fill the tank to the top. (see fig.)





Refuelling, oil

The oil tank [1] is mounted on the left side in front of the fuel tank. Here, the two-stroke oil for separate lubrication of the engine must be filled in. The oil level can easily be checked through the transparent material of the oil tank.

Engine oil:

2-stroke engine oil suitable for separate lubrication

KTM recommends Motorex Cross Power 2T



To open it:

turn closure cap counterclockwise.

To close it:

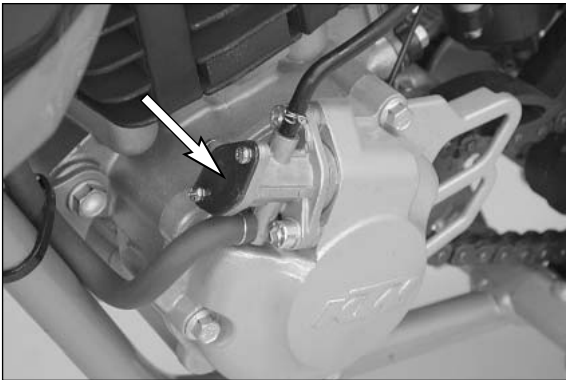
apply closure cap and turn it clockwise.

Tank volume: 0.3 liters

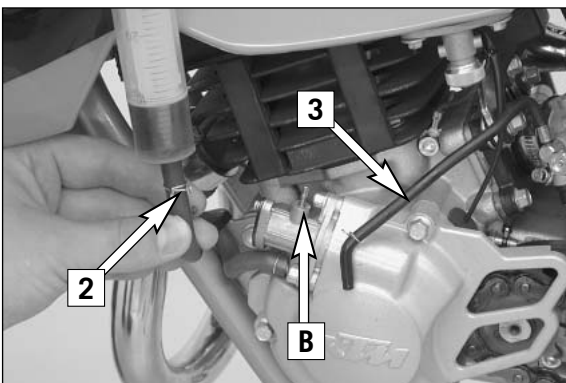
! CAUTION

Once there is no two-stroke oil in the oil tank, the engine is bound to break down.

When you refuel, the oil in fresh-oil tank [1] should reach up to the [A] mark. This amount of oil is enough for a full fuel tank.



The oil pump is mounted on the ignition cover and is powered by the crankshaft.



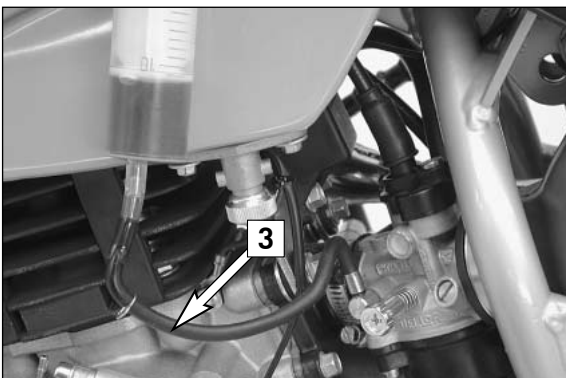
Bleeding the oil system (50 Mini Adventure)

If the oil tank is empty and air has gotten into the oil system, the oil system must be bled.

To bleed, disconnect the oil line [2] from the oil tank and the oil line [3] from the oil pump. Add oil with a syringe until the bubble-free oil leaks out of hole [B] on the oil pump. Connect the oil line [2] to the oil tank. Use the syringe to bleed the oil line [3] to the carburetor and connect to the oil pump. Afterwards, fill the oil tank with Motorex Cross Power 2T engine oil.

! CAUTION

Always make sure you run the oil hoses without kinks.



PERIODIC MAINTENANCE »

A CLEAN MOTORCYCLE CAN BE CHECKED MORE QUICKLY WHICH SAVES MONEY!		50 Mini SX 50 Mini Adventure 2008	Service every 5 hours	Service every 20 hours
Engine	Check engine for leaks		●	●
	Change transmission oil		●	●
	Check spark plug, change it if necessary, set electrode gap			●
	Adjust the clutch engagement speed.		●	●
Carburetor	Check carburetor for tight fit at intake flange			●
	Check intake flange for cracks			●
	Check idle setting when engine is warm			●
Add-on-parts	Check exhaust system for leaks and suspension			●
	Check actuating cables for damage, smooth operation, and kinkless, arrangement, adjust and lubricate		●	●
	Clean air filter and air filter box		●	●
Brakes	Check brake fluid level, lining thickness, brake discs (50 Mini SX)			●
	Check brake cables for damage			●
	Check/function adjust smooth operation, free travel of hand levers		●	●
	Check screws of brake system for a tight fit		●	●
Chassis	Check suspension strut and fork for leaks and a proper function			●
	Check swinging-fork pivot			●
	Check/adjust steering-head bearing			●
	Check all chassis screws for a tight fit (fork plates, axle nuts, swinging-fork pivot, suspension strut)			●
Wheels	Check spoke tension and rim joint		●	●
	Check tire condition and inflation pressure			●
	Check chain, chain joint, chain wheels, chain wheel guides for wear, a tight fit, and tension		●	●
	Lubricate chain		●	●
	Check wheel bearings for play		●	●

PERIODIC MAINTENANCE »

ADDITIONAL SERVICE WORK TO BE PERFORMED UNDER A SEPARATE ORDER.			
	every 20 hours	every 40 hours	once a year
Check the reed-type intake valve for wear	•	•	
Check the clutch shoes for wear	•	•	
Check the length of the clutch springs	•	•	
Check the clutch drum for wear	•	•	
Check the cylinder and piston for wear	•	•	
Check the oil pump (only separate lubrication)	•	•	
Check the eccentricity of the crankshaft journal	•	•	
Check the radial clearance of the conrod bearings	•		
Check the radial clearance of the piston pin main bearing	•		
Check the crankshaft main bearing for wear	•		
Replace the crankshaft bearings and conrod bearings		•	
Check the entire transmission including bearings for wear		•	
Drain and clean the carburetor's float chamber			•
Perform complete fork maintenance			•
Clean and lubricate the swinging-arm bearing			•
Clean and lubricate the steering-head bearing and sealing elements			•
Change brake fluid (50 Mini SX)			•

Maintenance work done by KTM authorized workshops is not a substitute for care and checks done by the rider!

Note: If the inspection establishes that permissible tolerances are exceeded, the respective components must be replaced.

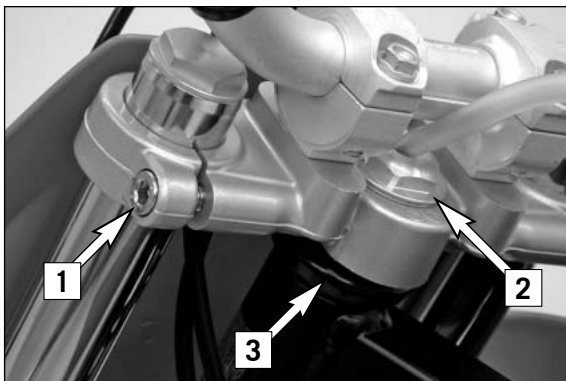
VITAL CHECKS AND CARE PROCEDURES TO BE CONDUCTED BY THE OWNER OR THE MECHANIC				
	before each start	after every cleaning	for cross country use	once a year
Check transmission oil level	•			
Check brake fluid level (50 Mini SX)	•			
Check brake pads for wear	•			
Check brake performance	•	•		
Lubricate and adjust actuating cables and nipples		•		
Remove and clean dust sleeves of telescopic fork at regular intervals			•	
Clean and lubricate chain, check tension and readjust it if necessary		•	•	
Clean air filter and filter box			•	
Check tire inflation pressure and wear	•			
Check fuel line for leaks	•			
Drain and clean float chamber		•		
Check oil lines for cracks or kinks (for separate lubrication only)	•			
Verify smooth operation of all controls	•			
Treat exposed metal components (except for the brake and exhaust systems) with wax-based anti-corrosion agents		•		
Check all screws, nuts, and hose clamps for their tight fit at regular intervals				•

⚠ WARNING

Maintenance work and adjustments marked with an asterisk (*) must be performed by an expert. To protect your youngster, always have such work performed by a specialized KTM dealer where your motorcycle will be optimally serviced by appropriately qualified, skilled staff.

! CAUTION

- When cleaning the motorcycle, do not use a high pressure cleaning unit if possible, otherwise water will penetrate the bearings, carburetor, electric connectors, Drum brakes, etc.
- Before cleaning with water, plug the exhaust pipe to prevent water ingress.
- When transporting your motorcycle, secure it with elastic straps or other mechanical devices in an upright position. Be sure that the fuel tap is closed. If the motorcycle topples over, fuel can flow out of the carburetor or fuel tank.
- Do not use toothed washers or spring rings with the engine fastening screws, as these work into the frame parts and keep working loose. Instead, use self-locking nuts.
- Let your motorcycle cool down before beginning any maintenance work in order to avoid getting burned.
- Dispose of oils, fatty matters, filters, fuels, washing detergents etc. properly.
- Under no circumstances may used oil be disposed of in the sewage system or in the open countryside. 1 liter of used oil contaminates 1,000,000 liters of water.



Checking and adjusting the steering head bearing *

The steering head bearing should be checked regularly for play. For this purpose, jack up the motorcycle by the frame so that the front wheel is in the air. Now try to move the fork forward and backward. There should be no clearance. For readjustment, release the two clamp screws [1] of the top triple clamp and the counternut [2]. Turn the adjusting nut [3] until almost no play is left. Do not tighten the adjusting nut! Tightening the adjusting nut can damage the bearings! Keep in mind that tightening the counternut [2] reduces the play of the bearing. Slightly tap the top triple clamp with a rubber hammer to prevent jamming. Then tighten the 2 clamp screws with 25 Nm.

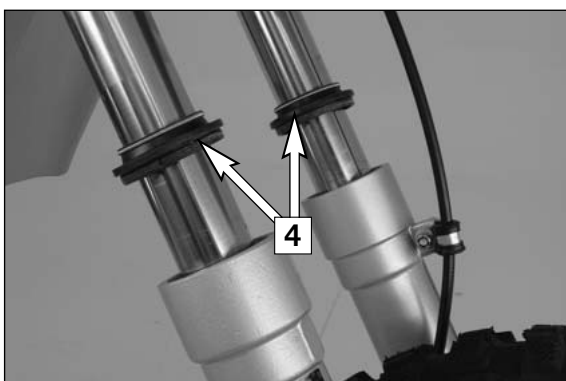
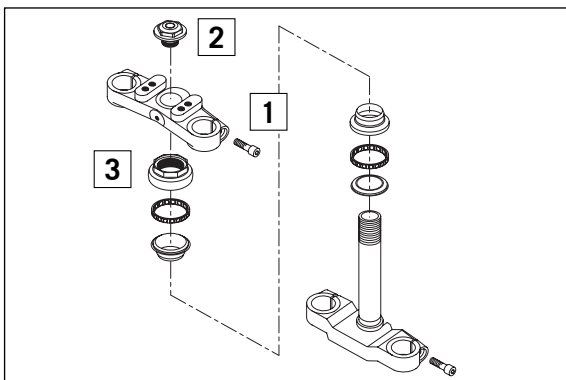
⚠ WARNING

If the steering head bearing is not adjusted to be free of clearance, the motorcycle will exhibit unsteady driving characteristics and can get out of control.

! CAUTION

- The handlebar must move easily. Otherwise the bearings will be damaged.
- If you drive with play in the steering head bearing for longer periods, the bearings and subsequently the bearing seats in the frame will be destroyed.

At least once a year, the steering head bearings should be smeared with water-proof grease. (Motorex Long Term 2000)

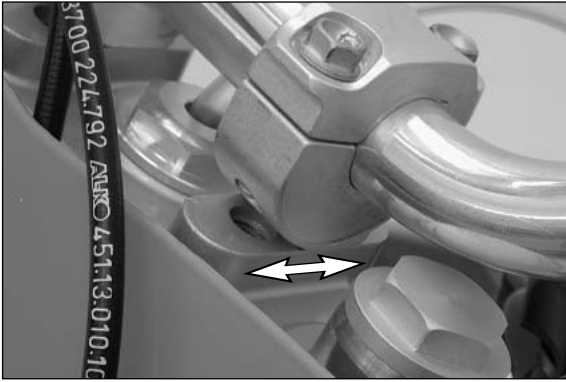


Cleaning the dust scrubbers of the telescopic fork

The dust scrubbers [4] should be cleaned on a regular basis. For this purpose, use a screwdriver to lift the dust scrubbers out of the slider tubes, clean them thoroughly with compressed air, spray the fork tubes and dust scrubbers Universal oil spray (Motorex Joker 440) or engine oil and press the scrubbers back into the slider tubes.

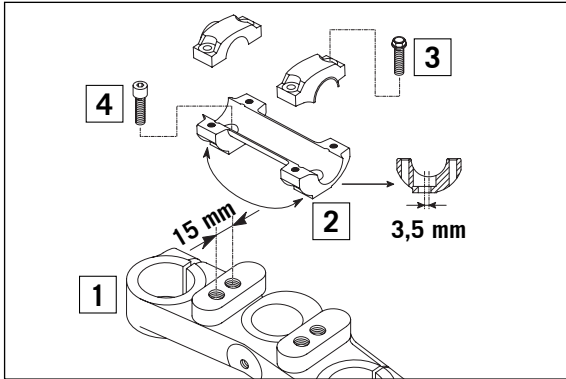
⚠ WARNING

No oil may reach the front tire or the brake disks since this would considerably reduce the tire's road grip and the braking effect of the front brake.



How to change the handlebar position

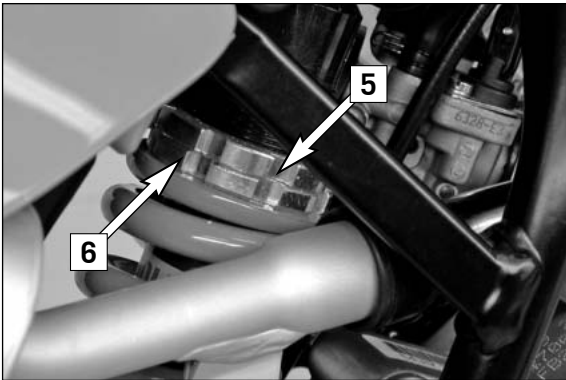
The handlebar position can be readjusted by 22 mm (0.9 in). The upper triple clamp [1] includes 2 bores arranged at a distance of 15 mm (0.6 in) from one another. The bores at the handlebar support [2] are offset from the center by 3.5 mm (0.13 in). Accordingly, you can mount the handlebar in 4 different positions.



For this purpose, remove screws [3] of the handlebar clamps and screws [4] of the handlebar support. Position handlebar support, and tighten screws [4] to 40 Nm. Mount handlebar and handlebar clamps, and tighten screws [3] to 20 Nm. The gap between the handlebar support and handlebar clamps should be the same size in the front and in the rear.

⚠ WARNING

The screws [4] must be secured with Loctite 243.



Changing spring preloading of the shock absorber

This is easily done.

NOTE: Before changing the spring preload note down the basic setting, e.g. how many threads are visible above the adjusting ring.

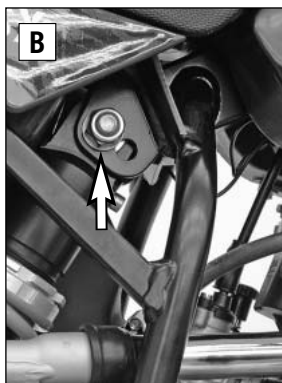
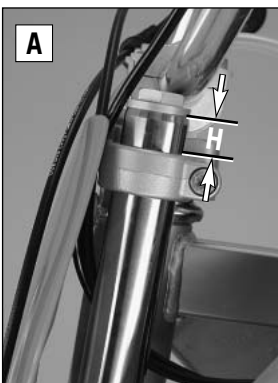
Remove the right side cover.

Loosen the locking ring [5] with the hook spanner. Change the spring preload with the adjusting ring [6] and re-tighten the locking ring [5].

BASIC SETTING – SPRING PRELOAD:

50 Mini Adventure 8 mm (0.32 in)

50 Mini SX 5 mm (0.20 in)



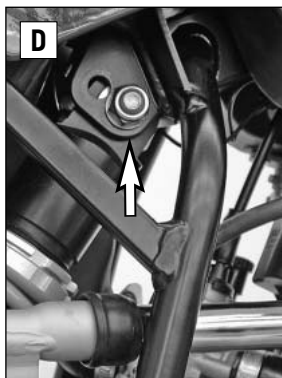
Changing the seat height

The seats on some mini models can easily be raised by 25 mm (1 in). This allows you to adjust the seat as your child grows.

Figures A and B show the fork and shock absorber positions for a low seat position. The fork tubes extend approx. 17 mm (0.7 in) (H) above the top triple clamp. The shock absorber is attached to the upper hole in the frame. Tighten the clamp screws on the fork stabilizers to 25 Nm (top) and 10 Nm (bottom), the bold on the shock absorber to 45 Nm.

Figures A and B: low seat position

Figures C and D: high seat position

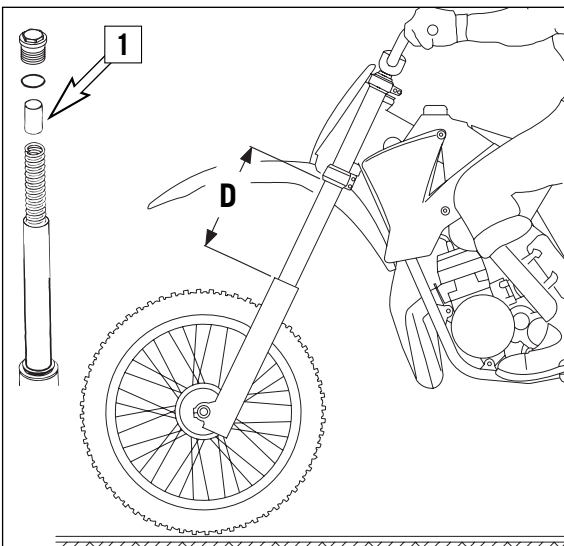
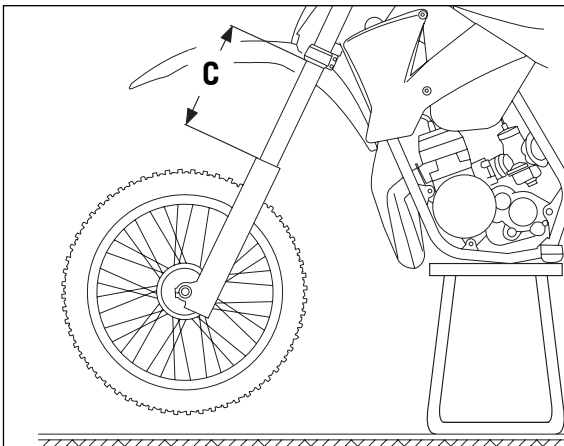
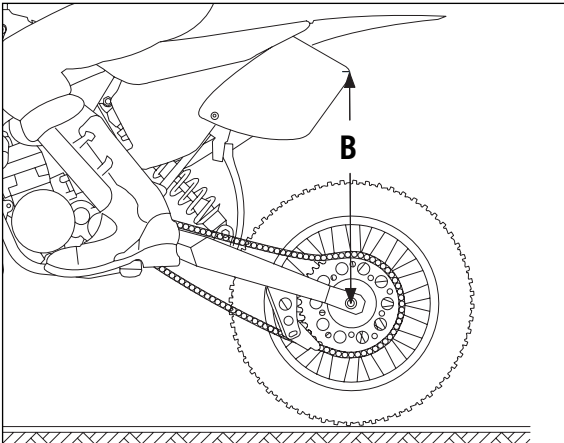
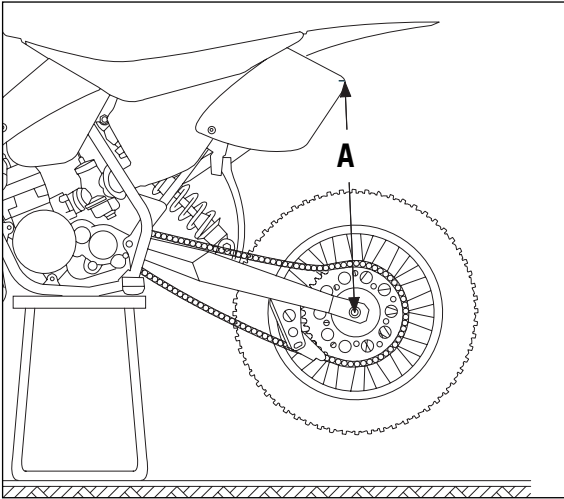


Figures C and D show the fork and shock absorber positions for a high seat position. Fork tubes are flush with top of top triple clamp. (Bold cap (Aluminium) protrudes from the top of the top triple clamp)

The shock absorber is attached to the lower hole in the frame. Tighten the clamp screws on the triple clamp to 25 Nm (top) and 10 Nm (bottom), the bold on the shock absorber to 45 Nm.

⚠ WARNING

The fork tubes may not be lowered any further than as described above, otherwise the clamping on the top triple clamp will no longer be adequate.



Basic suspension setup for the weight of the driver (50 Mini SX)

To achieve maximum handling performance and to prevent the telescopic fork and shock absorber from being damaged, the basic setup of the suspension components must be suitable for your child's weight. At delivery, KTM's mini motorcycles are set to accommodate a driver weighing 25 - 30 kg (wearing full protective clothing). If your child's weight exceeds or falls short of this range, you will need to adjust the spring preload for the telescopic fork and shock absorber accordingly.

To adjust, check the sag of the shock absorber and telescopic fork. The motorcycle should be filled up and your child should be wearing full protective clothing.

To determine the sag of the shock absorber

- Jack up the motorcycle until the rear wheel no longer touches the ground.
- Measure the vertical distance between the rear wheel axle and a fixed point (e.g. a mark on the side cover) and write it down as dimension A.
- Place the motorcycle on the ground again.
- Have your child sit on the motorcycle in a normal seating position (feet on the footrests) wearing full protective clothing and bounce up and down a few times to allow the rear wheel suspension to become level.
- Holding your child and the bike, have another person measure the distance between the same two points with the load on the motorcycle to establish dimension B.
- The sag is the difference between dimensions A and B.

EXAMPLE:

Motorcycle jacked up (dimension A) 330 mm
Motorcycle on ground with driver seated (dimension B) – 285 mm
 Sag 45 mm

50 Mini SX shock absorber sag 50 mm (± 5 mm)

If the sag is lower, the spring preload of the shock absorber must be reduced, if the sag is higher, the spring preload must be increased (see Changing spring preloading of the shock absorber).

To determine the sag of the telescopic fork

- Jack up the motorcycle until the rear wheel no longer touches the ground.
- Measure the distance between the upper edge of the slider tube and the triple clamp and write it down as dimension C.
- Have your child sit on the motorcycle in a normal seating position (feet on the footrests) wearing full protective clothing, and bounce up and down a few times to allow the telescopic fork to become level.
- Holding your child and the bike, have another person measure the distance between the same two points with the load on the motorcycle to establish dimension D.
- The sag is the difference between dimensions C and D.

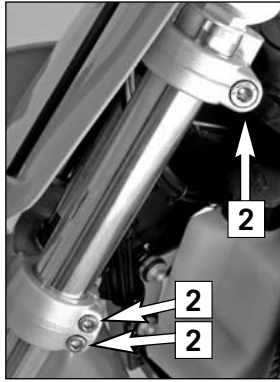
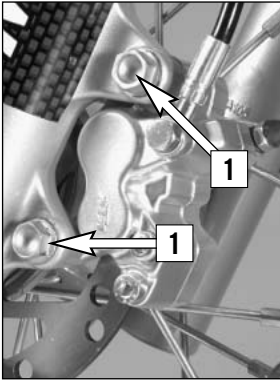
EXAMPLE:

Motorcycle jacked up (dimension C) 200 mm
Motorcycle on ground with driver seated (dimension D) – 160 mm
 Sag 40 mm

50 Mini SX telescopic fork sag 40 mm (± 5 mm)

If the sag is lower, the spring preload of the telescopic fork must be reduced, if the sag is higher, the spring preload must be increased.

The preload on the fork spring is determined by the length of preload spacer [1]. If an adjustment is necessary, demount the fork legs, remove the plugs and shorten the pretensioning sleeves or replace with longer ones (see Maintenance of telescopic fork). Harder fork springs are also available for both models (see spare parts catalog).



Telescopic fork maintenance (50 Mini SX) *

The telescopic fork must be serviced at least once a year.

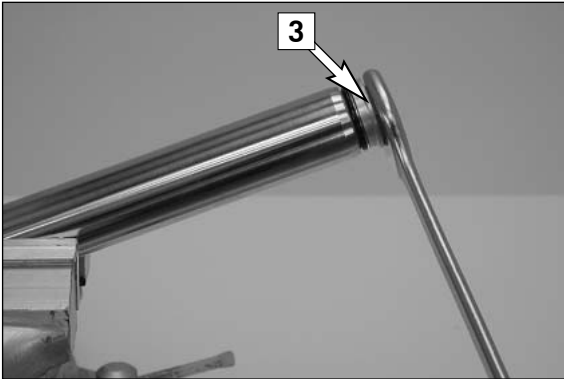
To service the fork, proceed as follows:

Prop up the motorcycle under the frame to take the load off the front wheel. Disassemble the front wheel, remove screw [1] from the brake caliper and unscrew holding clamp. Measure the projection of the fork legs at the upper fork stabilizer and make a note of the measurement.

Loosen the clamping screws [2] on the fork stabilizers and pull the fork legs down out of the fork stabilizers.

! CAUTION

- Do not operate the hand brake when the front wheel has been dismantled.
- Make sure the brake disc is always on top when you lay down the wheel, otherwise the brake disc can be damaged.



Clamp the fork leg into a vise (use protective jaws) and remove the plugs [3]. Take the preload spacer and the spring out of the fork tube.

Remove screws [4] at the underside of the slider tubes and pull the fork tubes out of the slider tubes.

Remove the dust scrabbers [5].



Thoroughly clean all parts and check for wear.

Generously lubricate seals and springs and reassemble the telescopic fork.

Tighten the screws on the bottom of the sliding tubes to 30 Nm.

Fill in fork oil and assemble the fork (see below). Degrease the screws on the brake caliper and apply Loctite 243. Mount the brake caliper and tighten to 20 Nm. Mount brake line and holding clamp.

Insert fork legs in the fork stabilizers (projection as previously noted) and tighten clamping screws to 25 Nm (top) and 10 Nm (bottom).

Mount front wheel (see chapter: mounting the front wheel).

⚠ WARNING

The screws [1] must be secured with Loctite 243.



Changing the telescopic fork oil (50 Mini SX) *

Remove front wheel and fork legs (see above).

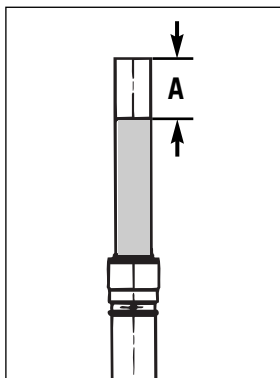
Remove plugs, preload spacers and springs.

Drain the fork oil into an appropriate container.

Clean the dust scrabbers.

⚠ WARNING

- It is very important to keep the brake disk free from oil and fatty matters. Otherwise, the braking effect would be strongly reduced.
- After working on the brake system, always operate the hand brake lever to apply the brake shoes to the brake disk and have a point of pressure.



Pour 170 cm³ SAE 7.5 fork oil into each fork tube.

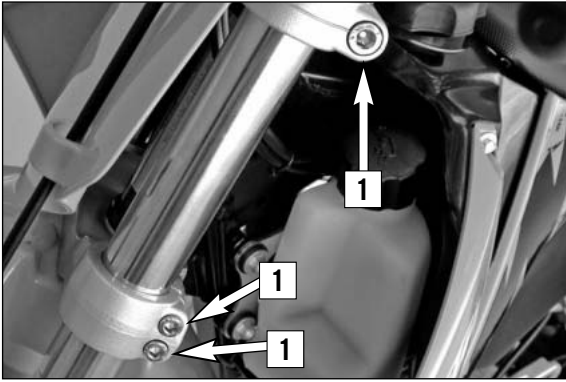
Slide the fork tube all the way into the slider tube.

Adjust the air-chamber length A to 110 mm (4.5 in) by extracting or adding fork oil.

Insert springs and pretensioning sleeves into the fork tube.

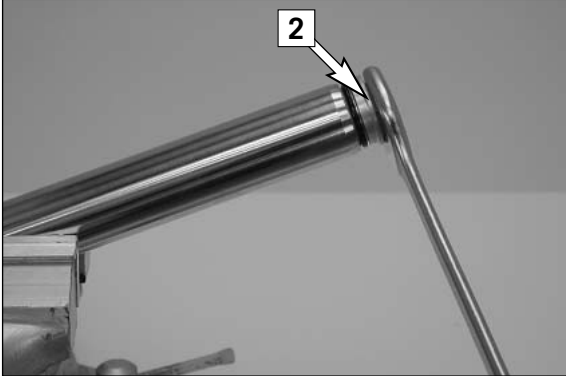
Check O-rings, grease and mount plugs.

Mount the fork legs, front wheel and brake caliper (see above).



Telescopic fork maintenance (50 Mini Adventure)*

The telescopic fork must be serviced at least once a year:
 Jack up the motorcycle by the frame to take the weight off the front wheel.
 Remove the front wheel and the brake cable guide.
 Measure the projection of the fork legs at the upper fork stabilizer and make a note of the measurement.
 Release the clamp screws [1] at the triple clamps and pull the fork legs downwards out of the triple clamps.



Clamp the fork leg into a vise (use protective jaws) and remove the plugs [2].
 Take the preload spacer and the spring out of the fork tube.
 Remove screws [3] at the underside of the slider tubes and pull the fork tubes out of the slider tubes.
 Remove the dust scrubbers [4].

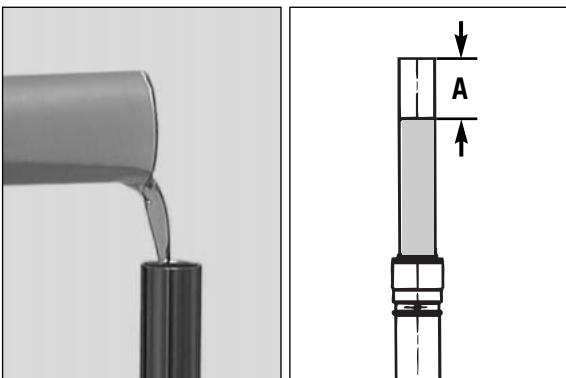


Thoroughly clean all parts and check for wear.
 Grease gaskets and springs and reassemble the telescopic fork.
 Tighten the screws at the underside of the slider tubes to 30 Nm.
 Fill in fork oil and assemble the fork (see below).
 Insert the fork legs into the triple clamps (projection as previously noted) and tighten the clamp screws to 25 Nm (top) and 10 Nm (bottom).
 Mount the front wheel (see chapter: mounting the front wheel).

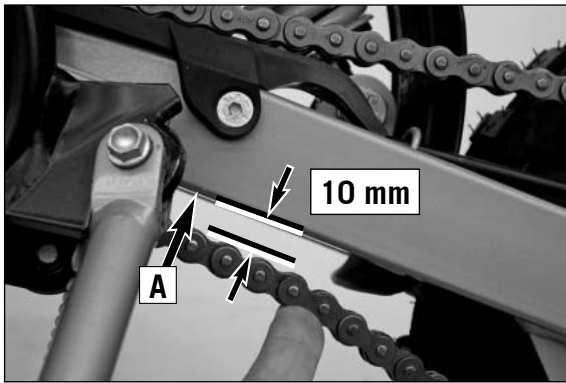


Changing the telescopic fork oil (50 Mini Adventure) *

Remove front wheel and fork legs (see above).
 Remove plugs, preload spacers and springs.
 Drain the fork oil into an appropriate container.
 Clean the dust scrubbers.



Pour 170 cm³ SAE 7.5 fork oil into each fork tube.
 Slide the fork tube all the way into the slider tube.
 Adjust the air-chamber length **A** to 110 mm (4.5 in) by extracting or adding fork oil.
 Insert springs and pretensioning sleeves into the fork tube.
 Check O-rings, grease and mount plugs.
 Mount fork legs and front wheel (see above).
 Mount brake control cable and brake cable guide.
 Adjust the cable control on the front brake.

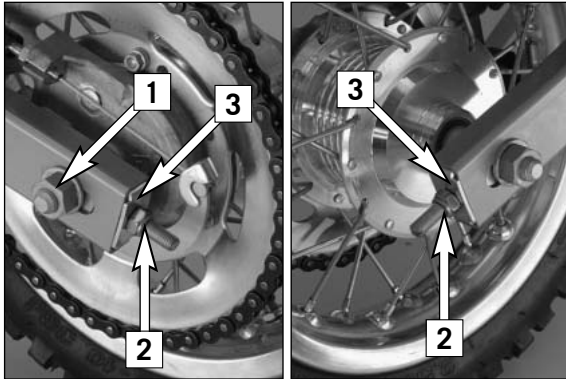


Check chain tension

Park the motorcycle on the side stand and switch off the engine. Chain tension has to be checked close to the lower rear shock mounting A. When pushing the chain upwards, the distance to the swingarm has to be 10 mm (0.4 in). If necessary, correct chain tension.

⚠ WARNING

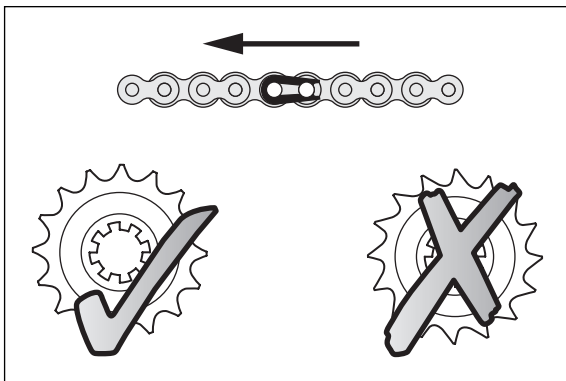
- If chain tension is too great, parts within the secondary transmission (chain, chain wheels, gear box and rear wheel bearings) will be subjected to unnecessary stress, resulting in premature wear and even chain breakage.
- Too much slack in the chain, on the other hand, can result in the chain jumping off the chain wheels. If this happens, the chain could also block the rear wheel or damage the engine.
- In either case the operator is likely to lose control of the motorcycle.
- Be careful not to get your finger caught between the chain and the rear sprocket or other components.



Correct chain tension

Release the hexagon nut of the wheel spindle [1] and turn the left and the right hexagon nut [2] equally far.

Before tightening the hexagon nut of the wheel spindle to 40 Nm, ensure that the supporting plates [3] are resting against the swing arm. Additionally, check that the rear wheel is aligned with the front wheel.



Chain maintenance

For long chain life, good maintenance is very important. Chains without O-rings should be cleaned in fireproof solvent regularly and afterwards treated with hot grease or chain spray (Motorex Chainlube 622).

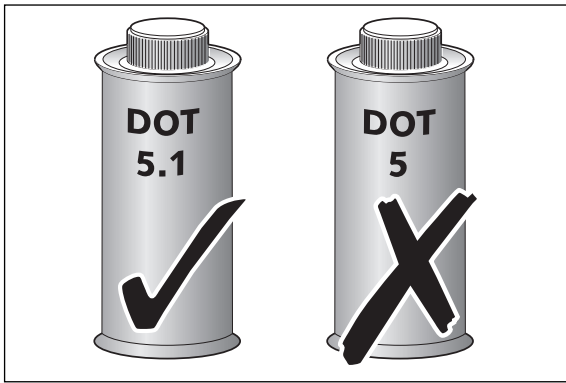
⚠ WARNING

Keep the rear wheel free of grease! Grease on the rear wheel will significantly reduce the grip of the rear tire and the motorcycle could easily get out of control.

! CAUTION

When mounting the chain masterlink clip, the closed side of the masterlink clip must point in running direction.

Also check sprockets and chain guides for wear, and replace if necessary.



General information about KTM disc brakes

BRAKE FLUID RESERVOIRS:

The brake fluid reservoirs for the front brake is designed such that it does not need to be refilled, even if the brake shoes are worn. If the brake fluid level drops below the minimum level either the brake system has a leak or the brake pads are completely worn.

In this case, consult an authorized KTM dealer immediately.

BRAKE FLUID:

We recommend that you use Motorex DOT 5.1 brake fluid when you refill or change the brake fluid. DOT 5.1 brake fluid has a wet boiling point of 180°C / 356°F (25°C / 45°F higher than DOT 4) and is safer for high performance applications. Brake fluid DOT 5.1 is a polyethylene glycol based fluid, amber-colored and can be mixed with DOT 4 brake fluid. **Do not, in any event, use DOT 5 brake fluid.** It is based on silicone oil and is dyed purple. KTM motorcycle gaskets and brake hoses are not designed for DOT 5 brake fluid.

⚠ WARNING

Have the brake fluid changed at least once annually. If you wash your motorcycle often, the brake fluid should be changed even more frequently. Brake fluid tends to absorb water. Therefore, vapor pockets may form in "old" brake fluids even at low temperatures, causing the brake system to fail.

BRAKE DISC:

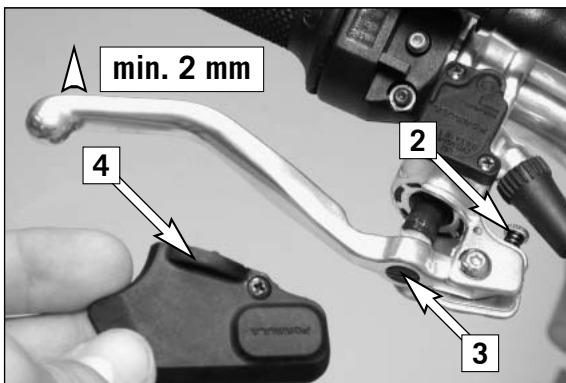
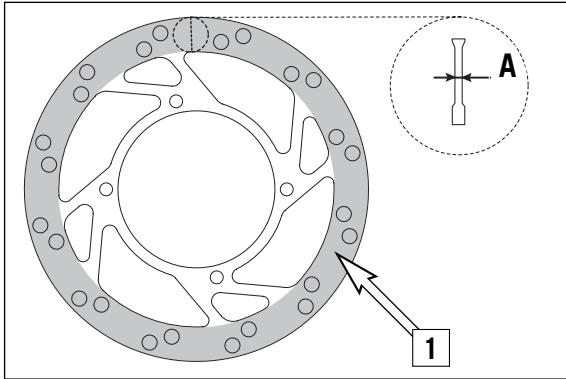
Due to wear, the thickness of the brake disc in the area of the contact face [1] of the brake pads decreases. The brake disk must be at least 2.50 mm thick at the thinnest point [A]. Check the thickness of the brake disk at several points.

⚠ WARNING

- A brake disk worn down to less than 2.50 mm is a safety risk. Have the brake disk replaced as soon as it reaches the service limit.
- Have any repairs on the brake system be performed by a KTM dealer.

BRAKE CALIPERS:

Secure the screws on the brake caliper with Loctite 243 and tighten to a torque of 20 Nm.

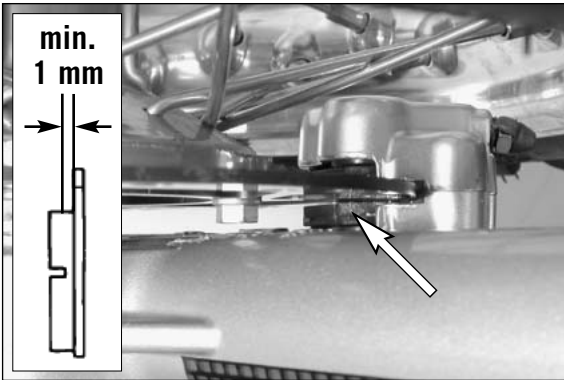
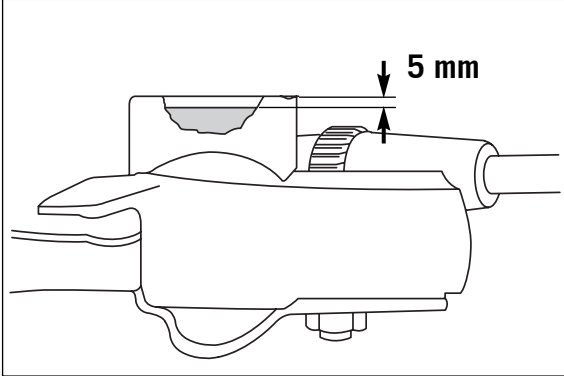
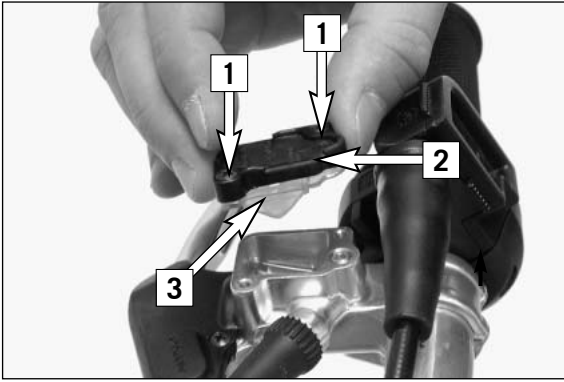


Setting the basic position and play of the hand brake lever (50 Mini SX) *

You can adjust the basic position of the hand brake lever to fit your child's hand by turning stop screw [2]. Afterwards, be sure to adjust the play of the hand brake lever to 2 mm (0.08 in) with the adjusting screw [3]. To adjust, remove covering cap [4]. Replace the covering cap after making the adjustment.

! CAUTION

At the hand brake lever, free travel must at least be 2 mm (0.08 in). Only then may the piston in the hand brake cylinder be moved (to be recognized by the greater resistance of the hand brake lever). If this free travel is not provided, pressure will build up in the braking system, and the front-wheel brake may fail due to overheating.



Checking/refilling the front brake fluid level (50 Mini SX) *

The brake fluid reservoir is combined with the hand brake cylinder on the handlebar. To check the brake fluid level, press the brake pistons back into the basic position. Move the hand brake cylinder in a horizontal position, remove the screws [1] and the cover [2] with the diaphragm [3]. The brake fluid level should be 5 mm below the upper edge of the reservoir (see drawing), otherwise add DOT 5.1 brake fluid (e.g. Motorex Brake Fluid DOT 5.1) up to 5 mm below the upper edge of the reservoir.

Mount the diaphragm, the cover and the screws and actuate the hand brake lever until you feel the point of pressure again. Wipe off any overflowing or spilled brake fluid with water.

⚠ WARNING

- Actuate the hand brake lever until you feel the point of pressure again.
- Never use DOT 5 brake fluid! It is based on silicone oil and of a purple color. Seals and brake hoses must be especially adapted to it.
- Store brake fluid out of reach of children.
- Brake fluid can cause skin irritation. Avoid contact with skin and eyes. If you get brake fluid in your eyes, rinse with plenty of water and consult a doctor.

! CAUTION

- Don't let brake fluid get in contact with paint, it is an effective paint remover.
- Use only clean brake fluid taken from a tightly sealed container.

Checking front brake pads (50 Mini SX)

Inspect the brake pads from in front of the vehicle. The linings must be at least 1 mm (0.04 in) thick.

⚠ WARNING

At their most worn point brake pad linings should not be thinner than 1 mm (0.04 in), otherwise they could lead to brake failure. For your own safety don't put off having your brake pads changed.

! CAUTION

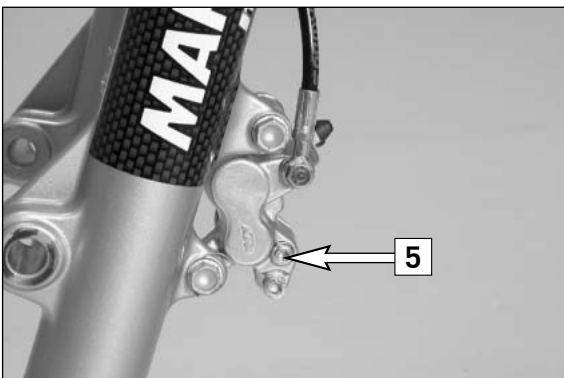
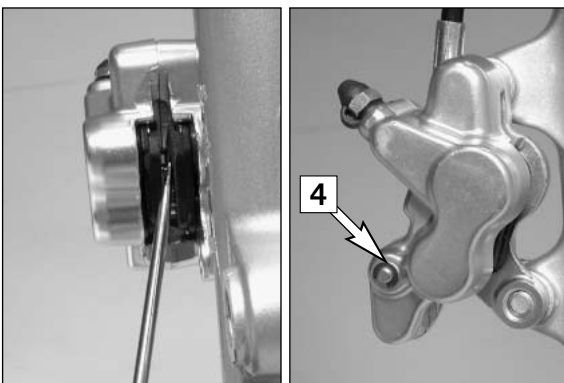
If the brake pads are replaced too late so that the lining is partly or entirely worn, the steel components of the brake pad will rub against the brake disc, thereby impairing the braking effect and destroying the brake disc.

Replacing the front brake pads (50 Mini SX) *

Remove the front wheel (see front wheel chapter).

Press brake shoes apart with a suitable screwdriver to put the brake pistons in their basic position.

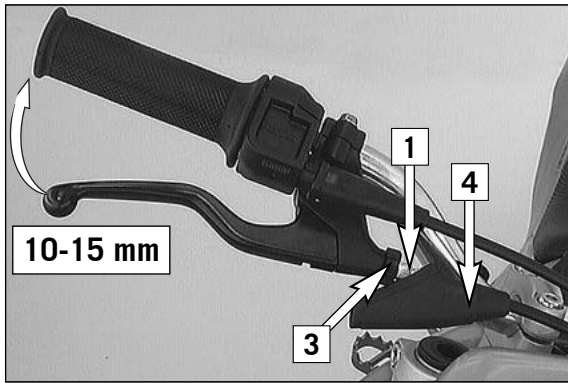
Remove the lock washer [4] from the screw as well as fixing screw [5] and take the brake shoes out of the brake caliper. Clean brake caliper thoroughly with compressed air.



Mount the left brake shoe and fix with screw. Mount the right brake shoe and tighten the screw to 4 Nm. Mount the lock washer. Align brake shoes, mount front wheel (see chapter: Mounting the front wheel).

⚠ WARNING

- It is very important to keep the brake disc free from oil and fatty matters. Otherwise, the braking effect would be strongly reduced.
- After assembly, check if circlips have been fitted correctly.
- Do not unscrew any other screws on the brake caliper or you will have to bleed the brake system.
- After working on the brake system always operate the hand brake lever to apply the brake pads to the brake disc and create a point of pressure.



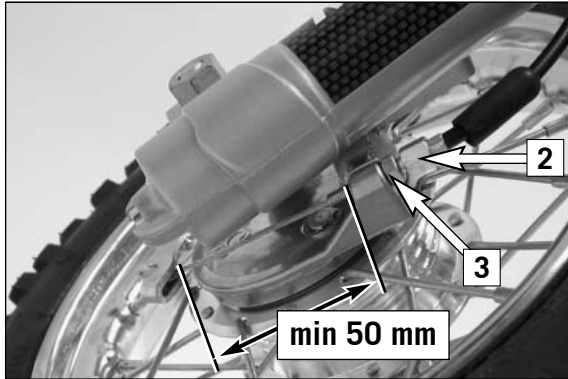
Adjusting the front wheel brake cable (50 Mini Adventure)

The hand brake lever should travel between 10 and 15 mm (0.4-0.6 in) before the front wheel is actually slowed down.

To adjust the brake control cable, use either the adjusting screw [1] at the hand brake lever or the adjusting screw [2] at the brake backing plate. Before commencing to adjust the cable, always release the counternut [3]. Afterwards, the counternut must be retightened. Properly remount the rubber protection piece [4] pulled back earlier.

! CAUTION

After adjusting the cable, always check if the wheel turns smoothly.

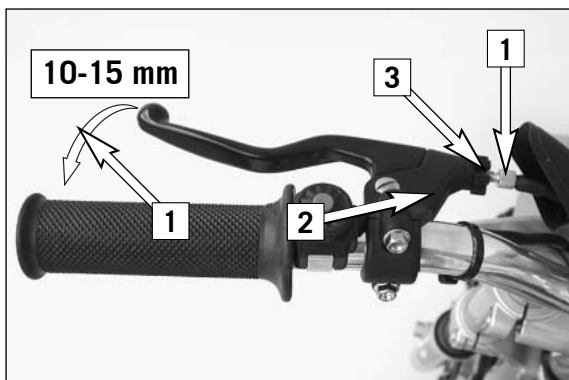


Checking the front brake linings for wear (50 Mini Adventure)

The brake linings must be replaced when the distance between the hub brake lever and the cable support, measured with the brake lever squeezed, is less than 50 mm (2 in) (see illustration).

! CAUTION

If the brake linings are replaced too late, i.e. when the lining is partly or fully worn away, the metal shoes will rub against the brake drum, thus reducing the braking effect and destroying the brake drum.



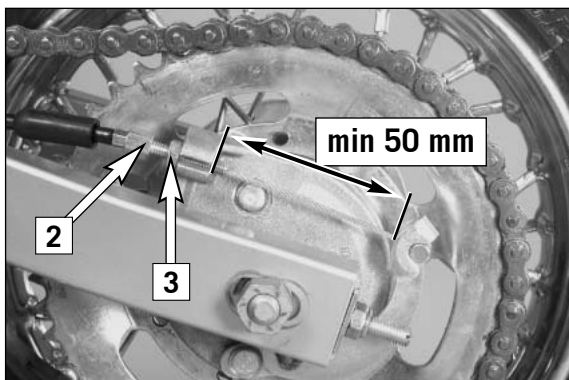
Adjusting the rear wheel brake cable

The hand brake lever should travel between 10 and 15 mm (0.4-0.6 in) before the rear wheel is actually slowed down.

To adjust the brake control cable, use either the adjusting screw [1] at the hand brake lever or the adjusting screw [2] at the brake backing plate. Before commencing to adjust the cable, always release the counternut [3]. Afterwards, the counternut must be retightened. Regarding the rubber protection piece, proceed as for the front-wheel brake.

! CAUTION

After adjusting the cable, always check if the wheel turns smoothly.

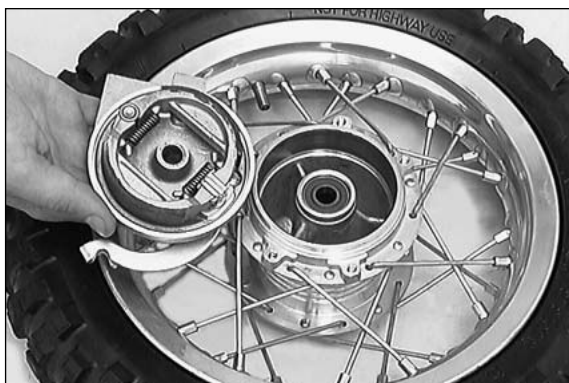


Checking the rear brake linings for wear

The brake linings must be replaced when the distance between the hub brake lever and the cable support, measured with the brake lever squeezed, is less than 50 mm (2 in) (see illustration).

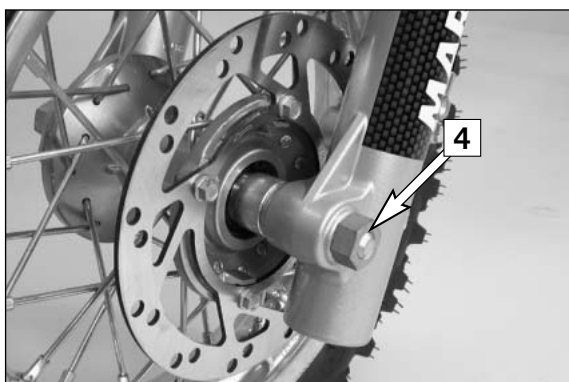
! CAUTION

If the brake linings are replaced too late, i.e. when the lining is partly or fully worn away, the metal shoes will rub against the brake drum, thus reducing the braking effect and destroying the brake drum.



Drum brake maintenance

Drum brake maintenance is limited to occasional blowing out of brake drum and brake shoes. Brake drum and brake linings can be slightly roughened with an abrasive tape.



Removing and mounting the front wheel (50 Mini SX)

Jack the motorcycle up by the frame so that the front wheel is suspended above the ground.

Undo the hexagon nut [4] and remove it together with the washer.

Hold the front wheel and pull out the wheel spindle [5].

Carefully take the front wheel out of the fork.

! CAUTION

- Do not operate the hand brake when the front wheel has been dismantled.
- Make sure the brake disc is always on top when you lay down the wheel, otherwise the brake disc can be damaged.

Lift the front wheel into the fork and correctly position it

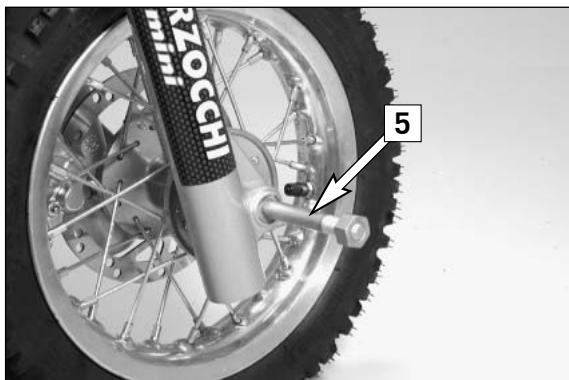
Mount the wheel spindle [5].

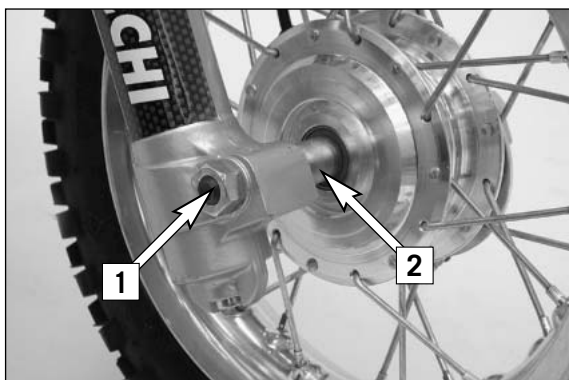
Mount the washer and the hexagon nut [4] and tighten 40 Nm.

Put the motorcycle back on the ground and operate the front wheel brake until the working point is reached.

⚠ WARNING

- If you don't happen to have a torque wrench at hand, make sure you have the tightening torque corrected by a KTM dealer as soon as possible. A loose axle may lead to an unstable driving behavior of your motorcycle.
- After mounting the front wheel, keep operating the hand brake until the pressure point returns.
- It is very important to keep the brake disk free from oil and fatty matters, otherwise the braking effects would be strongly reduced.

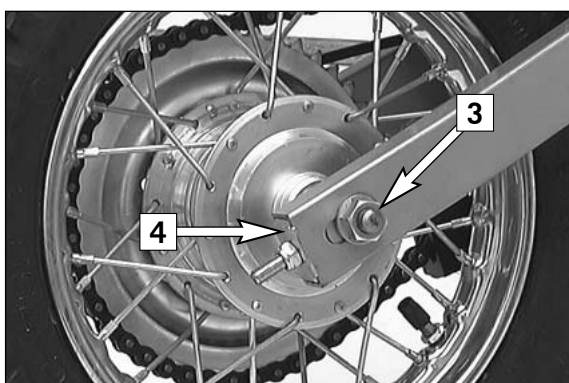




Removing and mounting the front wheel (50 Mini Adventure)

Jack up the motorcycle by the frame.
Remove the right hexagon nut of the wheel spindle [1] together with the washer.
Pull the wheel spindle halfway out and remove the spacer [2].
Now pull out the wheel spindle out until the wheel is free but not so far that the brake backing plate comes off.
Turn both wheel and fork slider tube to the left and remove wheel.

To mount the wheel reverse the procedure described above.
Tighten the hexagon nut to 40 Nm.



Removing and mounting the rear wheel

Prop up the motorcycle under the frame.
Remove the right hexagon nut of the wheel spindle [3] together with the washer.
Hold the rear wheel and remove the wheel spindle.
Move the rear wheel forwards, remove chain, lift the rear wheel out of the swinging fork and remove the brake anchor.

To mount the wheel reverse the procedure described above.
Always hook the brake backing plate into the swing arm support.
Before tightening the hexagon nut of the wheel spindle, ensure that the supporting plates [4] are resting against the swing arm. Additionally, check that the rear wheel is aligned with the front wheel.
Tighten the hexagon nut to 40 Nm.

⚠ WARNING

If you don't happen to have a torque wrench at hand, make sure you have the tightening torque corrected by a KTM dealer as soon as possible. A loose axle may lead to an unstable driving behavior of your motorcycle.



Tires, air pressure

Tire type, tire condition, and air pressure level affect the way your motorcycle rides, and they must therefore be checked whenever you are getting ready to go anywhere on your motorcycle.

- Tire size can be found in the technical specifications.
- Tire condition has to be checked every time you want to ride your motorcycle. Before leaving, check tires for punctures and nails or other sharp objects that might have become embedded in them.
- Regularly check the „cold“ tire pressure. Correct tire pressure (1.0 bar / 14 psi) guarantees optimum grip and maximum tire life.

⚠ WARNING

- Damaged tires must be replaced immediately to protect your youngster.
- Worn tires can have a negative effect on how the motorcycle performs, especially on wet surfaces
- Tire pressure below the normal level will lead to premature tire wear.

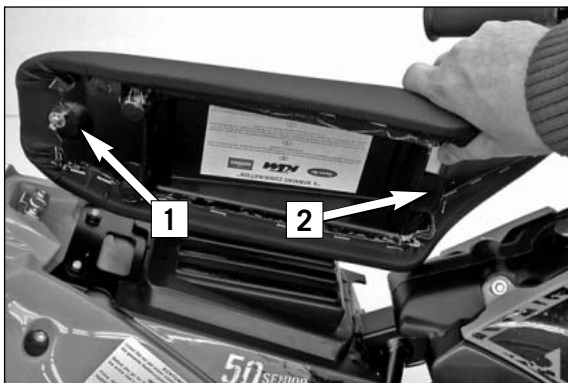


Checking spoke tension

The correct spoke tension is very important for the stability of the wheels and unbalanced and before long other spokes will have come loose. Check spoke tension, especially on a new motorcycle, in regular intervals. If necessary, have the spokes retightened and the wheel centered by a KTM dealer.

⚠ WARNING

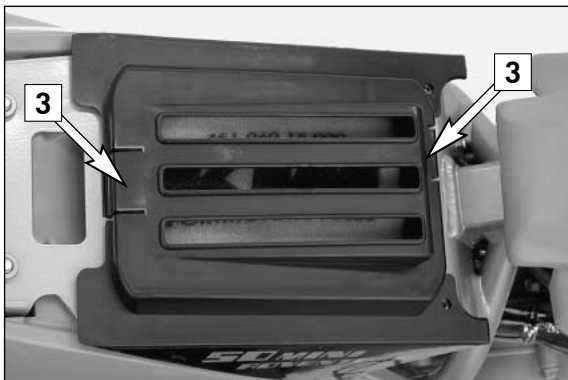
- Spokes can tear if you continue to ride with them loose. This may lead to an unstable handling of your motorcycle.
- Excessively tensioned spokes may rupture due to local overloading. The spokes must be tensioned to 3 Nm Mini SX/2,5 Nm Mini Adventure.



Removing the seat

The quick-release mechanism [1] allows removal of the seat without tools. Turn the quick-release device approximately 180° counter clockwise, lift the rear portion of the seat and pull the seat off backwards.

When mounting the seat ensure that the hook [2] engages at the tank.

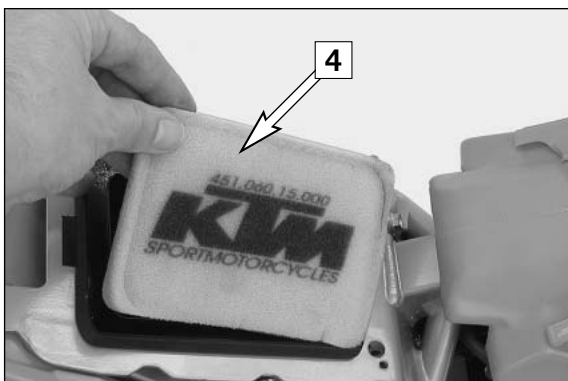


Cleaning the air filter *

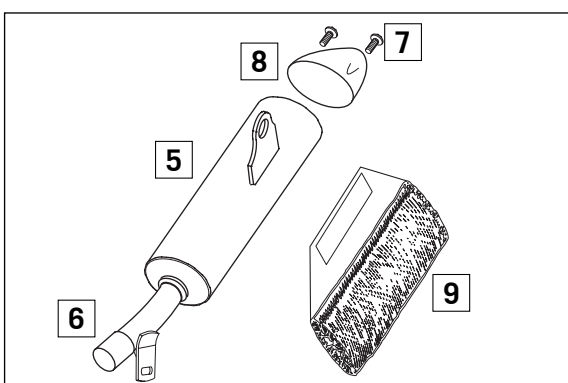
The air filter must be cleaned at intervals depending on the amount of dust accumulated. To clean the air filter, first remove the seat. Then press both retaining clips [3], remove the filter holder and the air filter [4]. The air filter consists of a foam rubber insert soaked with filter oil.

! CAUTION

- Do not clean the foam filter with fuel or petroleum since these will damage the foam. KTM recommends the products made by Motorex (Bio dirt remover and Liquid bio Power) for air filter maintenance.
- Never operate your motorcycle without an air filter. Otherwise, dust and dirt may get into the engine and lead to increased wear.
- The holder must retain the air filter throughout its entire circumference. If the filter has been mounted incorrectly, the engine will take in unfiltered air, thereby causing increased engine wear.



Thoroughly wash the foam filter in special cleaning fluid and allow it to dry well. Only press out the filter, do not wring it out under any circumstances. Oil the dry foam filter with a high-grade filter oil. Also clean the air filter box. Check carburetor collar for damage and that it is filled correctly. Insert the air filter in the opening and fasten it with the filter holder. Then mount the seat.



Exhaust system *

The silencer is filled with glass-fiber yarn for damping. When in use, the glass-fiber yarn becomes loose or coked with oil carbon. This can lead to a power loss and a reduction of the silencer damping. The glass-fiber yarn packing can be replaced in a few easy steps.

To replace, remove the silencer from the vehicle and mark the position of the outer tube [5] to the inner tube [6]. Remove screws [7] and the end cap [8]. Pull off the outer tube and remove the old glass-fiber yarn packing [9] from the inner tube. Thoroughly clean all parts.

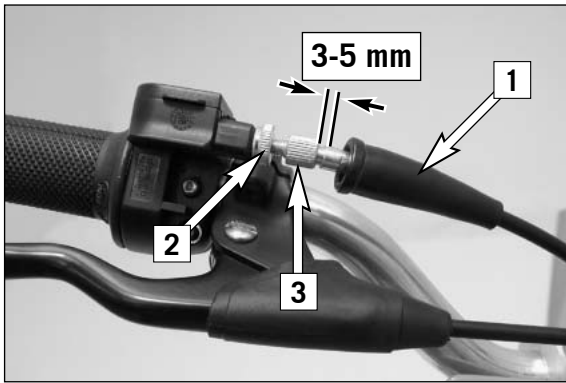
To assemble, mount a new glass-fiber yarn packing onto the inner tube (see illustration) and slide into the outer tube. Mount end cap and fix with screws [7]. Before tightening the screws, turn the outer tube until they match the positions you marked. Mount the silencer and check the exhaust system for tightness.

NOTE: Glass - fiber yarn packages are offered by your licensed KTM dealer.

⚠ WARNING

The exhaust system becomes very hot while the motorcycle is running. to avoid burns do not start work on the exhaust system until it has properly cooled down.

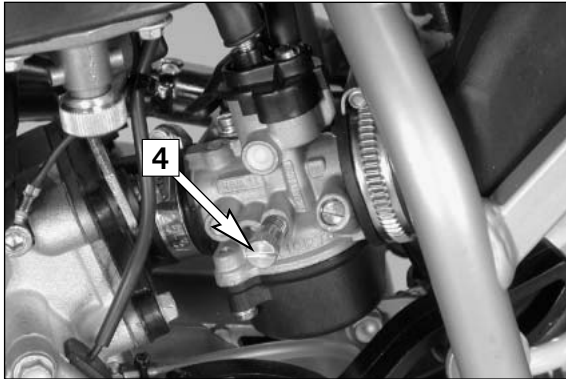




Adjusting the throttle cable *

There must always be a 3 to 5 mm (0.1 to 0.2 in) play in the throttle cable. To check this, move back the protective cover [1] on the throttle grip. You must be able to lift the outer covering of the cable 3-5 mm from the adjusting screw [3], until resistance is felt.

To adjust, loosen the counter nut [2] and turn the adjusting screw accordingly. Finally tighten counter nut and slide the protective cover back on.

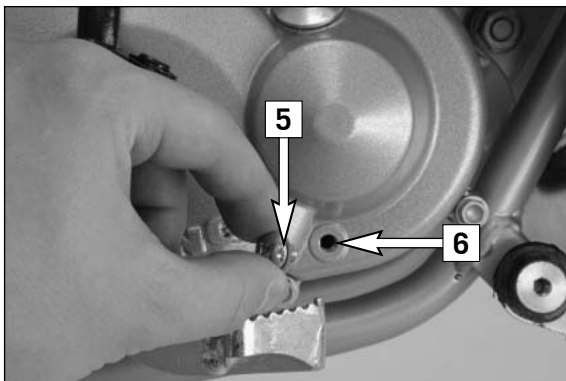


Adjusting the idle speed *

The idle speed can be adjusted with throttle stop screw [4].

Turning in clockwise direction will increase the idle speed.

Turning in counterclockwise direction will reduce the idle speed.

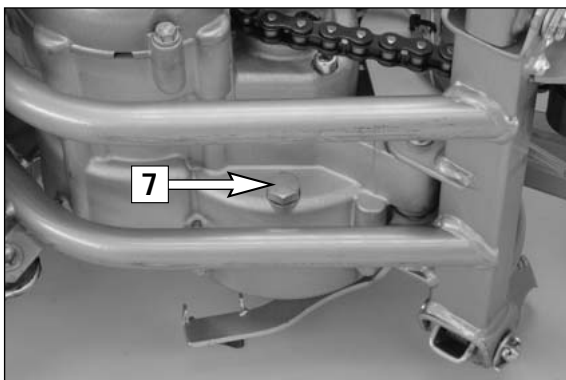


Checking the gear oil level

To check the gear oil level, first remove the plug [5]. With the motorcycle parked in an upright position, a small quantity of oil should flow out of the indicator opening [6]. If oil must be added, tilt the motorcycle and pour gear oil (Motorex ATF Super) into the bore.

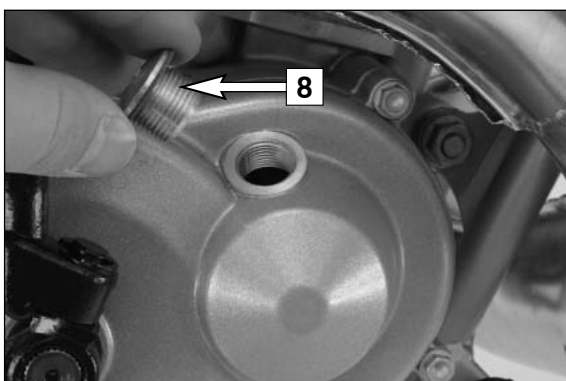
! CAUTION

Less oil or a poor oil quality lead to premature transmission wear. Therefore, only use branded products (Motorex ATF Super).



Changing gear oil *

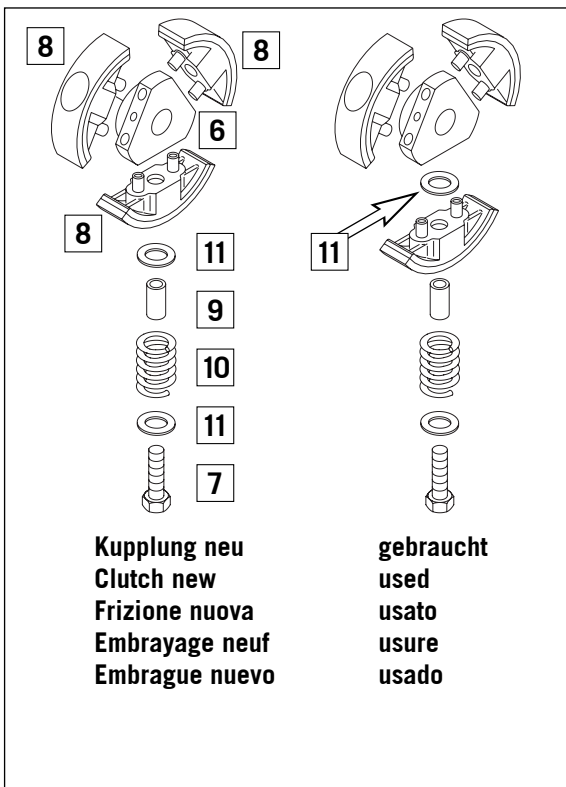
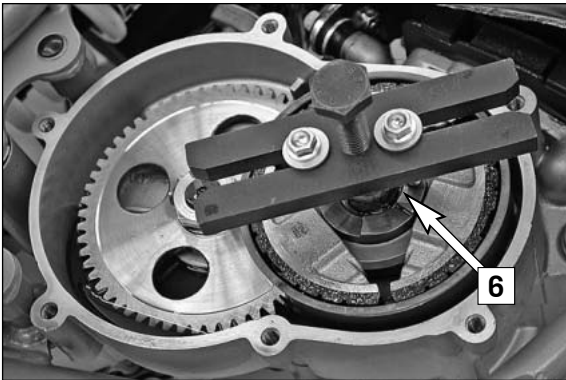
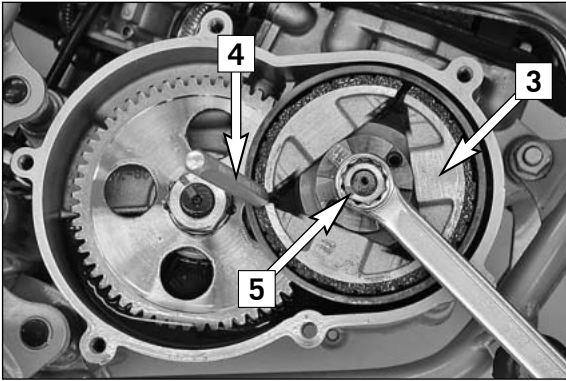
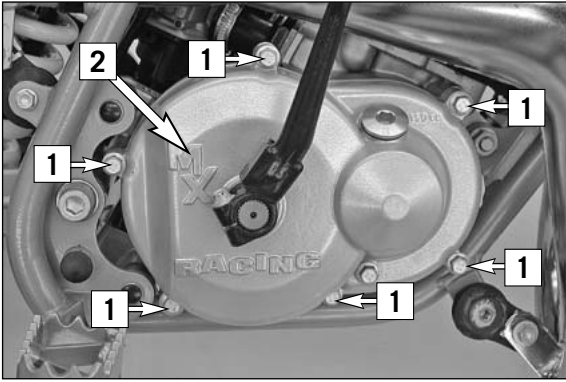
The engine must be warmed up before changing the gear oil. Park the motorcycle on a horizontal surface, remove the oil drain plug [7] and drain the used oil into an appropriate container. Clean the sealing surface, mount the oil drain plug together with the gasket and tighten to 15 Nm.



Remove stopper [8] and fill in 0.15-0.2 liters of automatic gear oil (Motorex ATF Super). Mount the stopper and check the engine for tightness.

! CAUTION

Less oil or a poor oil quality lead to premature transmission wear. Therefore, only use branded products (Motorex ATF Super).



Adjusting the centrifugal clutch *

A correctly adjusted centrifugal clutch will provide maximum engine performance and ease of driving and prevent the engine from overheating. Clutch wear can affect the clutch engagement speed.

The clutch will slip for a longer period of time at higher clutch engagement speeds, generating more frictional heat and causing the engine to overheat. If the clutch engagement speed is too low, the engine will not reach the performance range. In both cases, the engine will not seem to have enough power. Check the clutch engagement speed every 20 hours and correct if necessary or have it corrected by an authorized KTM workshop.

To tune your clutch, lay the bike on the left side. To prevent oil from leaking from the transmission vent hose, run the hose upwards and fasten. Remove the screws [1] and the clutch cover [2] and discard the gasket. Block the centrifugal clutch [3] with a suitable driver [4].

NOTE: insert the driver through both holes in the primary drive's drum and gear wheel.

Loosen the nut [5] on the clutch and pull out the driver. Remove the nut and shim from the crankshaft.

Screw the extractor (special tool item no. 590.29.021.044) onto the clutch hub [6] with the M5x50 screws, hold the extractor and remove the centrifugal clutch from the crankshaft by screwing in the extractor screw. Completely remove the centrifugal clutch, bearings and spacing washers from the crankshaft.

Loosen the HH screws [7] and remove the clutch shoes [8] from the clutch hub [6]. Remove the HH screws and bushings [9], the clutch springs [10] and the disks [11] from the clutch shoes.

ADJUSTING THE CLUTCH ENGAGEMENT SPEED:

The disks [11] used to pretension the clutch springs are located between the clutch springs (minimum length 19.6 mm) and the clutch shoes. Pretensioning the clutch springs lets you adjust the clutch engagement speed. 0.5 mm more pretension will increase the engagement speed by approx. 500 rpm.

The clutch engagement speed is the speed at which the clutch begins to engage to make the motorcycle drive off. The 50 AC engine has a clutch engagement speed of 4000-4500 rpm.

NOTE: a tachometer (special tool item no. 451.29.075.000) to test the clutch engagement speed is available from your KTM dealer.

CORRECTING CLUTCH WEAR:

Check the clutch shoes for wear. If the surface is only slightly worn you can remount them again.

NOTE: The centrifugal clutch has an outer diameter of approx. 82.5 mm when new.

To correct slight wear to the surface, you can insert one of the pretensioning disks [11] from each clutch spring between the clutch hub and the clutch shoes – see illustration.

If only one disk is installed, you can go ahead and use it.

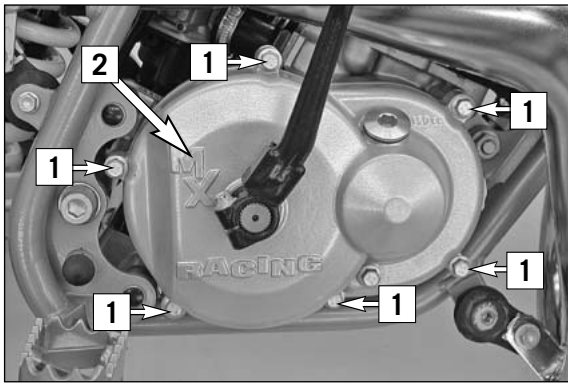
The inner diameter of the centrifugal clutch drum may not exceed 84.4 mm (new condition 84.0 mm).

Assemble in the reverse order.

Apply Loctite 243 to the HH screws [7] and tighten to 12 Nm.

Apply Loctite 243 to the M10x1.25 nut [5] on the crankshaft and tighten to 35 Nm. Mount a new gasket and position the clutch cover [2].

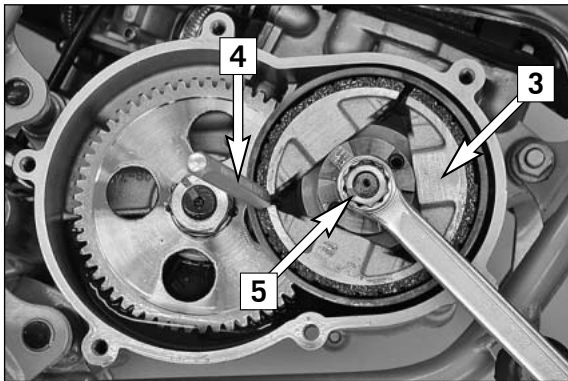
Screw on the clutch cover with 6 M6x25 screws [1] and tighten to 10 Nm. Move the transmission vent hose back in the original position.



Adjusting the centrifugal clutch (USA)*

A correctly adjusted centrifugal clutch will provide maximum engine performance and ease of driving and prevent the engine from overheating. Clutch wear can affect the clutch engagement speed.

The clutch will slip for a longer period of time at higher clutch engagement speeds, generating more frictional heat and causing the engine to overheat. If the clutch engagement speed is too low, the engine will not reach the performance range. In both cases, the engine will not seem to have enough power. Check the clutch engagement speed every 20 hours and correct if necessary or have it corrected by an authorized KTM workshop.



To tune your clutch, lay the bike on the left side. To prevent oil from leaking from the transmission vent hose, run the hose upwards and fasten. Remove the screws [1] and the clutch cover [2] and discard the gasket. Block the centrifugal clutch [3] with a suitable driver [4].

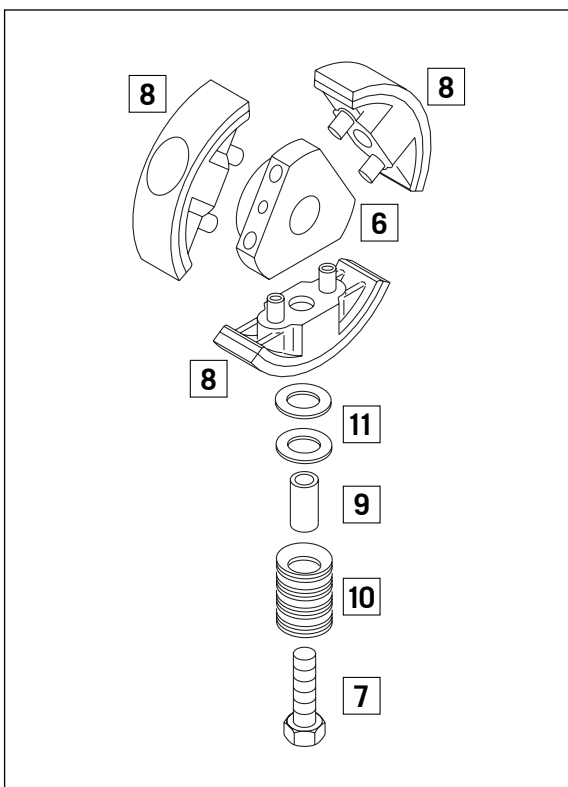
NOTE: insert the driver through both holes in the primary drive's drum and gear wheel.

Loosen the nut [5] on the clutch and pull out the driver. Remove the nut and shim from the crankshaft.



Screw the extractor (special tool item no. 590.29.021.044) onto the clutch hub [6] with the M5x50 screws, hold the extractor and remove the centrifugal clutch from the crankshaft by screwing in the extractor screw. Completely remove the centrifugal clutch, bearings and spacing washers from the crankshaft.

Loosen the HH screws [7] and remove the clutch shoes [8] from the clutch hub [6]. Remove the HH screws and bushings [9], the spring sets [10] and the disks [11] from the clutch shoes.



ADJUSTING THE CLUTCH ENGAGEMENT SPEED:

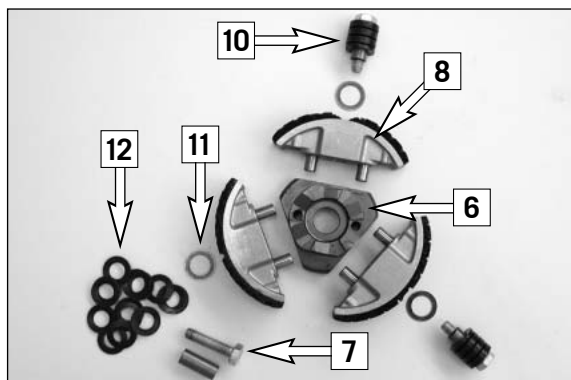
The spring sets contain 14 spring washers [12] that need to be positioned on top of each other in the order shown in the illustration [A].

Washers are located between the spring sets and the clutch shoes to pre-tension the spring sets. You can influence the clutch engagement speed by pre-tensioning the spring set. 0.5 mm more pretension will increase the clutch engagement speed by approx. 500 rpm.

The clutch engagement speed is the speed at which the clutch begins to engage and the motorcycle starts to drive off. The clutch engagement speed is 7300-7400 rpm for the 50 AC engine.

NOTE: a tachometer (special tool item no. 451.29.075.000) to test the clutch engagement speed is available from your KTM dealer.

Make sure the spring sets are not soiled during service or repair work to the clutch since this can cause them to malfunction.



CORRECTING CLUTCH WEAR:

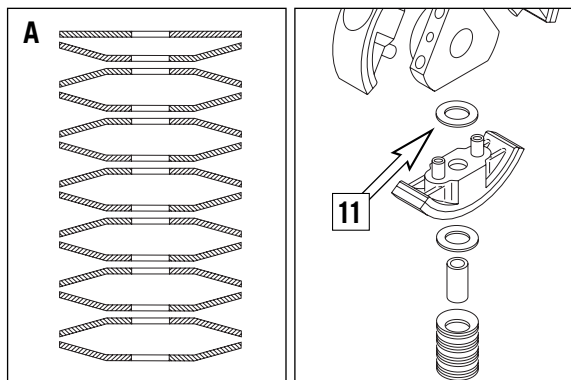
Check the clutch shoes for wear. If the surface is only slightly worn you can remount them again.

NOTE: The centrifugal clutch has an outer diameter of approx. 82.5 mm when new.

To correct slight wear to the surface, you can insert one of the pretensioning disks **[11]** from each clutch spring between the clutch hub and the clutch shoes – see illustration.

If only one disk is installed, you can go ahead and use it.

The inner diameter of the centrifugal clutch drum may not exceed 84.4 mm (new condition 84.0 mm).



Assemble in the reverse order.

Apply Loctite 243 to the HH screws **[7]** and tighten to 12 Nm.

Apply Loctite 243 to the M10x1.25 nut **[5]** on the crankshaft and tighten to 35 Nm.

Mount a new gasket and position the clutch cover **[2]**.

Screw on the clutch cover with 6 M6x25 screws **[1]** and tighten to 10 Nm.

Move the transmission vent hose back in the original position.

TROUBLE SHOOTING »

If you let the specified maintenance work on your motorcycle be carried out, disturbances can hardly be expected. Should an error occur nevertheless, we advise you to use the trouble shooting chart in order to find the cause of error.

We would like to point out that many operations cannot be performed by oneself. In case of uncertainty, please contact a KTM-dealer.

TROUBLE	CAUSE	REMEDY
Engine fails to start	Operating error	Open fuel tap, replenish fuel, do not use choke
	The motorcycle has been out of operation for a longer period of time. Therefore old fuel has accumulated in the float chamber	The easily inflammable components of the new fuels evaporate during longer periods of standstill. When the motorcycle has been out of operation for more than a week, it is therefore recommended to drain the old fuel from the float chamber. The engine will immediately start off when the float chamber is filled with new fuel.
	Fuel supply interrupted	Close fuel tap, loosen fuel hose at carburetor, lead into a basin and open fuel tap, <ul style="list-style-type: none"> – if fuel leaks out, clean carburetor – if no fuel leaks out, check tank ventilation, i.e. clean fuel tap
	Electrode distance too large	Reduce electrode distance (0.60 mm)
	Plug fouled by oil, wet or bridged	Clean spark plug or renew
	Ignition wire or spark plug connector damaged	Dismount spark plug, connect ignition cable, hold to ground (blank place on engine) and actuate kickstarter, a strong spark must be produced at the spark plug <ul style="list-style-type: none"> – If no spark is produced, loosen spark plug cap from ignition cable, hold about 5 mm from ground and actuate kickstarter – If a spark now occurs, replace spark plug cap – If no spark is produced, control ignition system
	Kill button wire or short-circuit switch faulty	Disconnect black colored cable from short circuit button at ignition coil and check ignition spark. If the spark is O.K. repair defective part of cable or ignition switch
	Loose ignition cable connectors	Inspect cable connectors
	Spark too weak	Examine ignition system
Engine without idle running	Water in the carburetor and jets blocked	Dismantle and clean carburetor
	Idle adjusting screw out of adjustment	Readjust idle running or replace idle adjusting screw
	Ignition system damaged	Examine ignition system
	Wear	Overhaul engine

TROUBLE	CAUSE	REMEDY
Less power of engine	Air filter obstructed	Clean or renew airfilter
	Fuel supply partly interrupted or blocked	Blow through fuel pipe and clean carburetor
	Loss of compression due to loose spark plug	Tighten spark plug
	Exhaust system damaged	Check exhaust system for damage
	Engine has not enough preignition	Check and adjust ignition
	Reed paddles tensionless or damaged, surface of reed valve housing damaged	Replace reed paddles or reed valve housing
	Wear	Overhaul engine
Engine stalling or running with four stroke cycle	Carburetor overflows if level adjust too high, float needle seating is dirty or enlarged	Clean carburetor, if necessary replace float needle and adjust level
	Loose carburetor jets	Tighten jets
High rpm misfiring	Incorrect heat range spark plug or low quality spark plug	Refer to technical data section
	Loose, corroded or non conductive ignition socket connector	Check and seal with silicon
Engine splutters into the carburetor	Lack of fuel	Clean fuel pipes, examine tank aeration and clean
	Spark plug with incorrect heat value (Ignition by incandescence)	Fit correct spark plug
	Engine takes air out of control	Check intake flange and carburetor if firmly setted
Engine overheating	Incorrect ignition timing because of loose stator screws	Readjust to correct ignition timing specifications, secure screws with Loctite 243
	Incorrect compression ratio	Measure and adjust compression ratio
Excessive oil escapes from transmission breather tube	Excessive oil quantity in transmission	Correct transmission oil level

CLEANING »

Clean your motorcycle regularly in order to keep its painted finish looking shiny and new.

The best manner would be to use warm water that has been mixed with a commercially available washing detergent and a sponge. The hard dirt can be removed before with the help of a soft water jet.

! CAUTION

Never clean your motorcycle with a high-pressured cleaner or a high-pressured water jet, otherwise the water might run into the electrical components, connectors, sheathed cables, bearings, carburetor, etc. and cause malfunctions, i.e., lead to the premature destruction of these parts.

- You should use commercially available detergents to clean the motorcycle. Heavily soiled parts should also be cleaned with the help of a paint brush.
- Before cleaning with water, plug the exhaust pipe to prevent water ingress.
- After the motorcycle has been rinsed with a soft water jet, it should be dried by air pressure and a cloth. Then take a short drive until the engine has reached its operating temperature, and also operate the brakes. The heat also causes the water at the inaccessible parts of the engine and the brakes to evaporate.
- Slide back the protective covers on the handlebar-mounted instruments so that any water that may have seeped into this part of the motorcycle is allowed to evaporate.
- After the motorcycle has cooled down, oil and grease all the gliding bearing parts. Also treat the chain with a chain spray.
- To prevent failures in the electric system, you should treat the short circuit button with a contact spray.

STORAGE »

If you want to put your motorcycle away for longer periods of time, please observe the following instructions:

- Clean motorcycle thoroughly (see chapter: CLEANING)
- Change engine oil (old engine oil contains aggressive contaminations).
- Let the engine warm up again, close fuel tap and wait until the engine dies off by itself. In this way, the carburetor jets are prevented from becoming resin-clogged by the old fuel.
- Remove spark plug and fill in approx. 5 ccm of engine oil into the cylinder through the opening. Actuate kickstarter 10 times in order to distribute the oil onto the cylinder walls and mount the spark plug.
- Let fuel flow out of tank into an appropriate basin.
- Correct tire pressure.
- Lubricate bearing points of the control levers, footrests, etc. as well as the chain.
- The storage place should be dry and not be subjected to overly great temperature fluctuations.
- Cover the motorcycle with an air permeable tarpaulin or blanket. Do not use airtight materials, as possible humidity might not be able to escape and thereby cause corrosion.

! CAUTION

It would be very bad to let the engine run for a short time during the storage period. The engine would not get warmed up enough and the thus developed steam would condense during the combustion process and cause the exhaust to rust.

USE AFTER PERIOD OF STORAGE

- Fill up tank with fresh fuel.
- Check motorcycle as before each start (see driving instructions).
- Take a short, careful test ride first.

NOTE: Before you put your motorcycle away for the winter, you should check all parts for their function and wear. Should any service jobs, repairs, or any refitting be necessary, you should have them carried out during the off-season (lower workload at mechanics' shops). This way, you can avoid the long waiting times at your shop at the beginning of the next biking season.

TECHNICAL DATA – ENGINE »

ENGINE	50 AC MINI SX	50 AC MINI ADVENTURE
Design	single cylinder 2-stroke engine, with reed valve inlet	
Displacement	49,0 cm ³	
Bore/Stroke	39,5 / 40 mm	
Fuel	Lead-free SUPER FUEL (RON 95)	
Lubrication	seperate lubrication	
2-stroke oil	high-grade two-stroke oils for separate lubrication (Motorex Cross Power 2T)	
Crankshaft bearing	2 grooved ball bearing	
Connecting rod bearing	needle bearing	
Piston pin bearing	needle bearing	
Piston rings	1 rectangular ring	
Primary drive	straight cut spur gears, 16 : 57 t	
Transmission oil	0,15-0,2 liter (0.033-0.044 US gal) gear oil Dexron II (Motorex ATF Super)	
Spark plug	NGK BR 8 ECM	
Electrode gap	0,6 mm (0,0236 in)	
Carburetor	Dell'Orto PHVA 12 XS	
Airfilter	wet foam type air filter insert	

BASIC CARBURETOR SETTING		
MODEL	50 MINI SX	50 MINI ADVENTURE
Type	Dell'Orto PHVA 12 XS	Dell'Orto PHVA 12 XS
Main jet	70	65 (70)
Needle jet	211 FA	211 FA
Idling jet	38	38
Jet needle	A10	A10
Needle position from top	4 th	4 th
Air/Mixture reg. screw open	1	4
Slide	40	40
Starting jet	60	60

TIGHTENING TORQUES – ENGINE		
Primary gear nut	M14x1.25	40 Nm
Hexagon nut ignition rotor	M10x1.25	20 Nm
Nut of clutch hub	M10x1.25	Loctite 243 + 35 Nm
Cylinder head screws	M7	15 Nm
Cylinder base nuts	M8	18 Nm
Allen head bolt - Stator	M5x25	Loctite 243 + 8 Nm
Oil plug	M16	5 Nm
Oil drain plug	M10	15 Nm
Other engine bolts	M5	7 Nm
	M6	10 Nm
	M8	30 Nm

TECHNICAL SPECIFICATIONS – CHASSIS »

CHASSIS	50 MINI SX	50 MINI ADVENTURE
Frame	single downtube, split-cradle	
Fork	Marzocchi Ø = 32 mm (1,26 in)	
Wheel travel front/rear	110/171 mm (4.3/6.8 in)	120/185 mm (4.7/7.3 in)
Rear suspension	Central shock absorber White Power 03.18.9D.04	Central shock absorber Paioli
Front brake	Disk brake Ø 160 mm (6.4 in)	Drum brake Ø 90 mm (3,5 in)
Rear brake	Drumbrake Ø 90 mm (3,5 in)	
Tires front/rear	2.50x10" Pirelli 33J / 2.75x10" Pirelli 33J	2.50x10" Pirelli 33J / 2.50x10" Pirelli 33J
Tire pressure	front/rear: 1.0 bar / 1.0 bar	front/rear: 1.0 bar / 1.0 bar
Fuel tank capacity	2 liter (0.52 US gallons)	
Final drive ratio	11 : 48	
Chain	1/2x3/16" 104 rolls	1/2x3/16" 96 rolls
Steering angle	66°	66°
Wheel base	910 mm (35.8 in)	910 mm (35.8 in)
Seat height, unloaded	530 or 550 mm (21 or 21.7 in) adjustable	530 or 550 mm (21 or 21.7 in) adjustable
Ground clearance	182mm (7.2 in)	182mm (7.2 in)
Rider's body height	max. 130 cm (51 in)	
Rider's body weight	max. 35 kg (78 lbs)	
Recommended age of rider	4 - 6 years	
Engine	50 AC	

TIGHTENING TORQUES – CHASSIS		
Hexagon nuts front axle	M12x1	40 Nm
Hexagon nuts rear axle	M12x1	40 Nm
Hexagon nut swing arm bolt	M10	45 Nm
Clamping bolt top triple clamp	M8	25 Nm
Clamping bolt bottom triple clamp	M6	10 Nm
Screws handlebar clamp	M8	20 Nm
Allan screw – Handlebar support	M10	Loctite 243 + 40 Nm
Front brake caliper	M8	Loctite 243 + 20 Nm
Front brake disk	M6 (10.9)	Loctite 243 + 15 Nm
Screw for brake pads	M6	4 Nm
Shock absorber top	M10	45 Nm
Shock absorber bottom	M10	45 Nm
Spoke nipple Mini Adventure	M3,5 (SW5)	3 Nm
Mini SX	M3,5 (SW5), M4 (SW5,5)	3 Nm
Other chassis screws	M5	6 Nm
	M6	10 Nm
	M8	25 Nm
	M10	45 Nm

STANDARD-ADJUSTMENT – FORK	
	50 MINI SX / MINI ADVENTURE
Spring	2,0 N/mm
Preload	10 mm (0.4 in)
Fork oil	SAE 7.5
Air chamber length	100 (3.9 in) / 110 mm (4.3 in)

STANDARD ADJUSTMENT – SHOCK ABSORBER		
	50 MINI SX	50 MINI ADVENTURE
Spring preload	5 mm (0.2 in)	8 mm (0.3. in)

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Chassis number

Engine number

Stamp of dealer

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In accordance with the international quality management ISO 9001 standard, KTM uses quality assurance processes that lead to the highest possible product quality.

INTENDED PURPOSE

KTM mini-sports motorcycles are designed and constructed to resist the usual wear and tear of normal use in competitions.

The motorcycles comply with the regulations and categories currently in effect with the leading international motorcycle associations.

OWNER'S MANUAL

Please read this manual thoroughly before letting your youngster ride the motorcycle for the first time. This manual contains important information and recommendations that will help you and your youngster to operate and handle the motorcycle properly. In the interest of everybody involved, we urge you to pay particular attention to instructions and information marked as follows:

WARNING

- Ignoring these instructions can be dangerous to life and limb!

CAUTION

- Ignoring these instructions may damage parts of the motorcycle or impair the motorcycle's traffic safety!

This manual contains important information on the operation and maintenance of your new KTM motorcycle. It went to press describing your model's latest state of development. Nevertheless, the descriptions may deviate slightly from the current design as our motorcycles are permanently improved. The Owner's Manual is an integral part of the motorcycle and must be handed over to the new owner when the motorcycle is sold.

SERVICE

Observance of the service, maintenance and tuning instructions for the engine and chassis specified in the Owner's Manual is a prerequisite for faultless operation and the avoidance of premature wear. An improperly tuned chassis can lead to damage and breakage of the chassis components (see chapter on checking the basic chassis setting).

The use of the motorcycle under extreme conditions, e.g. on extremely muddy and wet terrain, can lead to higher than average wear on components such as the drive train or the brakes. In this case it may become necessary to service or replace wear parts before the service limit specified in the maintenance schedule has been reached.

We expressly point out that work marked with an asterisk (*) in the chapter "Maintenance work on the chassis and engine" must be performed by a KTM workshop. If maintenance work should become necessary during a competition, it must be performed by a trained mechanic.

Please strictly observe the prescribed running-in periods and inspection and maintenance intervals. Compliance with these instructions will significantly prolong the life of your motorcycle.

WARRANTY

The service work specified in the "Lubrication and Maintenance Schedule" must be performed by a KTM workshop and recorded in the service manual otherwise claims under the warranty shall become void. No claims can be filed under the warranty for damage or consequential damage caused by manipulations or conversions to the motorcycle.

AUTOMOTIVE FLUIDS

The fuels and lubricants specified in the Owner's Manual or automotive fluids with equivalent specifications must be used in accordance with the maintenance schedule.

SPARE PARTS, ACCESSORIES

For the safety of your child, only use spare parts and accessories approved by KTM. KTM shall not assume any liability for other products or consequential damage resulting from the use of such products. When special needs arise, please contact a KTM dealer, who will seek the assistance of the KTM importer if necessary.

SAFETY

Parents should keep in mind that the safety of their youngsters always depends on the efforts made by the parents to ensure that the motorcycle is kept in good working order and only used on safe terrains. Nevertheless, driving the motorcycle, like driving any other vehicle, involves a potential risk. Therefore, please make sure that all fundamental precautions are taken. Please also read the „INFORMATION ON SAFE DRIVING FOR PARENTS“ on page 4.

TRANSPORT

When transporting your motorcycle, secure it with elastic straps or other mechanical devices in an upright position. Be sure that the fuel tap is closed. If the motorcycle topples over, fuel can flow out of the carburetor or fuel tank.

ENVIRONMENT

Riding an off-highway motorcycle is a wonderful form of outdoor recreation and we certainly hope that you and your youngsters will enjoy it to the full. However, this enjoyable outdoor activity can cause environmental problems or lead to conflicts with other people. Responsible use of the motorcycle will prevent such problems and conflicts. You can contribute to securing the future of motorcycling by making sure that you and your youngsters only use the motorcycle within the limits established by the applicable laws, making environmental protection one of your top priorities and never violating other people's rights.

In this spirit, we hope that you and your youngsters will always safely enjoy your motorcycle!

KTM-SPORTMOTORCYCLE AG
5230 MATTIGHOFEN, AUSTRIA

Attachments: 1 spare parts manual chassis & engine



KTM mini motorcycles are off-road motorcycles designed for one person only. They are not allowed on public roads.

The vehicle dimensions and components are designed for children from 4 to 10 years of age with a maximum weight of 35 kg (78 lbs) and a maximum height of 130 cm (51 in).

- Have your youngster wear proper protective gear whenever he or she rides the motorcycle: helmet, eye protection, chest, back, arm and leg protectors, gloves and boots. To set a good example, be sure to wear protective gear yourself whenever riding a motorcycle!
- Before your youngster takes his or her first ride, explain how each of the controls works and check if your youngster has understood what you explained. We recommend to review the entire owner's manual with your youngster item by item, paying particular attention to the specially marked warnings and pointing out the danger of injury.
- Instruct your youngster about riding and falling techniques, explain how the motorcycle will respond to shifting of the rider's weight, etc.
- Before starting the motorcycle for the first time check whether the basic fork and shock absorber settings are suitable for your child's weight (see chapter on checking the basic chassis setting)
- Before using the motorcycle you should always check all components for proper operation (see maintenance schedule). Have your youngster perform these technical checks himself / herself as well.
- Whenever you go for a ride with your youngster, keep in mind that the speed should be adjusted to your youngster and not the other way around.
- Your youngster must understand that all instructions he or she receives from you or any other supervising adult must be followed.
- Your child must be physically ready to ride a motorcycle. This means that he or she must at least be able to ride a bicycle. Being good at sports that require fast reactions is an additional advantage. Your youngster should be strong enough to pick up the motorcycle after a fall.
- Never demand too much of your youngster. Give him or her time to get used to the motorcycle and to improve his / her riding skills. Do not even consider letting your youngster participate in a race before his / her physical condition, riding skills and motivation have sufficiently developed.
- Explain to your youngster that he / she should always adjust his / her riding speed to the local conditions as well as to his / her own riding skills and that excessive speed can cause falls and severe injuries. Always keep in mind that youngsters tend to underestimate dangers or fail to recognize them altogether. The riding speed must be reduced, in particular, on unknown terrain.
- Never let your youngster ride the motorcycle without supervision. An adult should always be present.
- The motorcycle is designed for one rider only. Your youngster is not allowed to transport a passenger.
- When you go for a ride, somebody at home should always know where you are going and when you will be back. This makes it easier to send you help, should problems occur.

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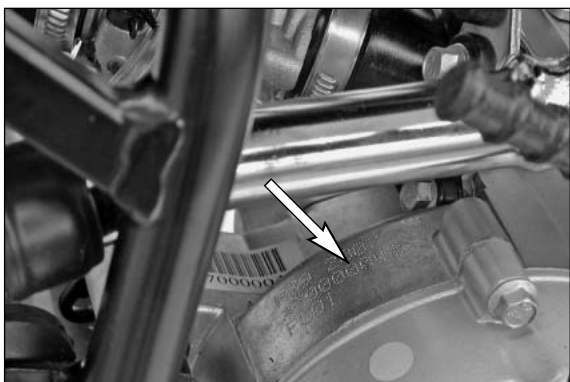
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SERIAL NUMBER LOCATIONS »



Chassis number

The chassis number is located on the type plate on the steering head. Enter this number in the field on page no 1.



Engine number

The engine number is stamped into the right half of the engine case next to the kickstarter. Enter this number in the relevant field on page 1.



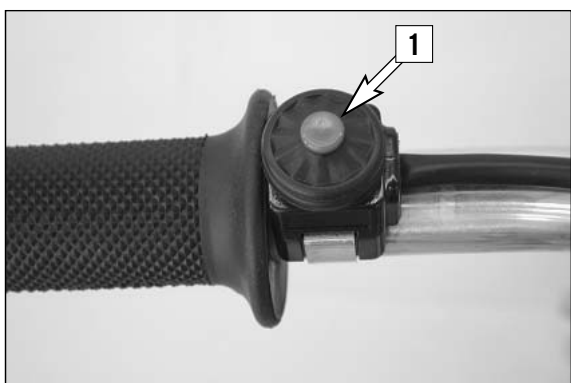
Throttle grip

The throttle grip is located on the right side of the handlebars. It is used to reduce the engine speed and, thus, the driving speed.



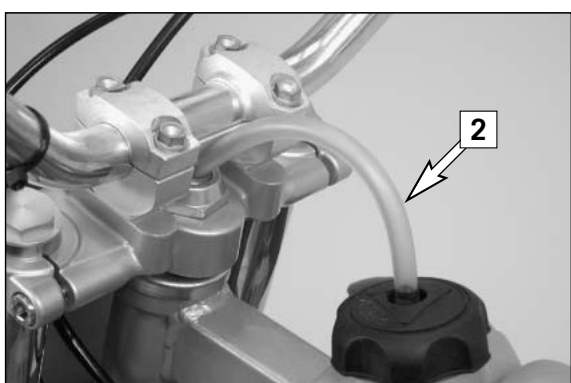
Hand brake lever

The hand brake lever is located on the right side of the handlebars and actuates the front wheel brake. The basic position can be adjusted to fit your child's hand.



Short circuit button

The short circuit button [1] turns off the engine. When pressing this button, the ignition circuit is short-circuited.

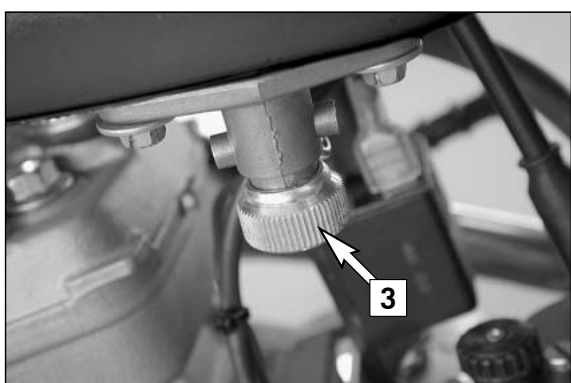


Filler cap

To open it: turn filler cap counter-clockwise.

To close it: put filler cap back on and tighten it by turning it clockwise.

Install tank breather hose [2] without kinks.

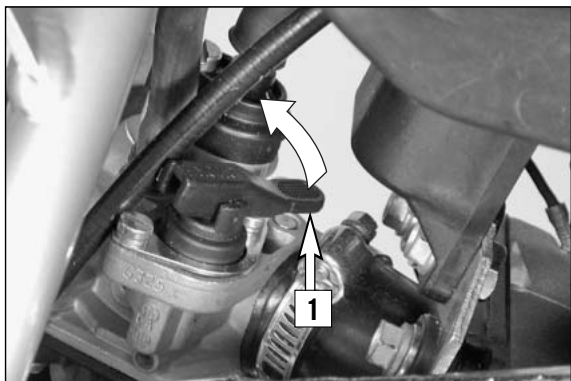


Fuel tap

The fuel tap [3] is located at the front of the motorcycle on the left side of the tank.

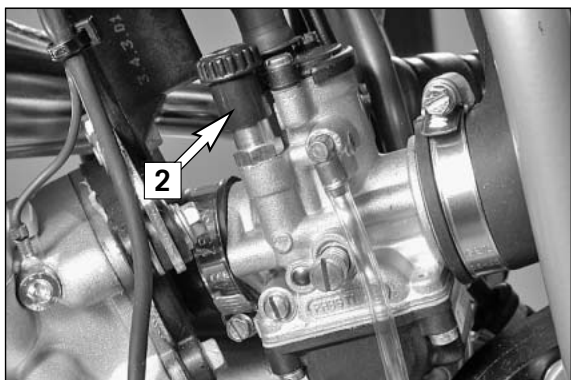
Opening the fuel tap: Turn the knob all the way to the left.

Closing the fuel tap: Turn the knob all the way to the right.



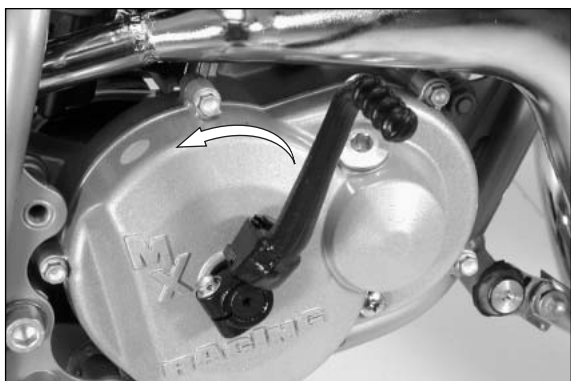
Choke Dell'Orto carburetor PHVA 14 DS (50SX Junior)

Choke lever [1] is mounted to the right side of the carburetor. If you move the choke lever up to the stop, a hole is opened in the carburetor through which the engine can draw in additional fuel. This results in a "rich" fuel-air mixture required for a cold start. Moving the choke lever back closes the hole in the carburetor again.



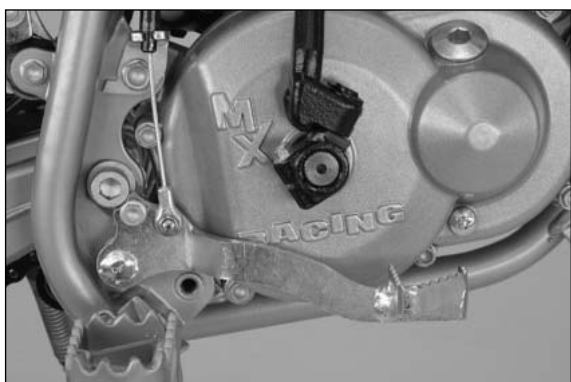
Choke Dell'Orto carburetor PHBG 19 BS (50 SX)

Choke control knob [2] is mounted to the left side of the carburetor. If you pull the choke control knob up to the stop and turn it 90°, a hole is opened in the carburetor through which the engine can draw additional fuel. This results in a "rich" fuel-air mixture required for a cold start. Turning back the choke control knob returns the knob to the starting position and closes the hole in the carburetor again.



Kickstarter

The kickstarter is mounted on the right side of the engine. Its upper part can be swivelled.



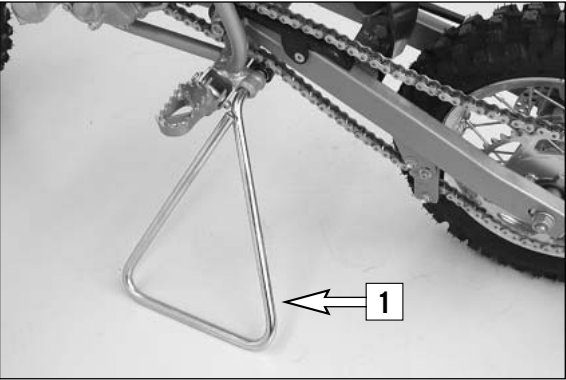
Foot brake lever

The foot brake lever is located in front of the right footrest. The basic position can be adjusted to the seating position (see maintenance work).



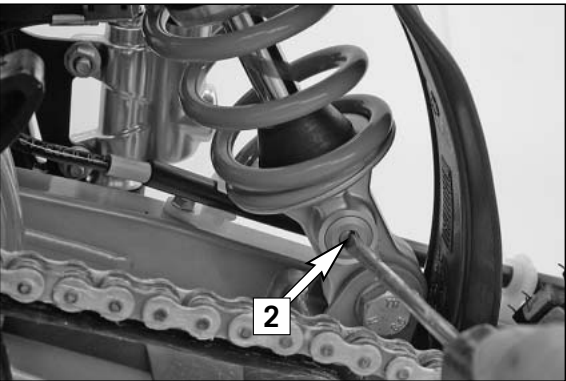
Side stand (50 SX Junior)

Use your foot to swing the side stand forwards to the stop. Make sure it rests securely on solid ground.



Plugin - Stand (50 SX)

A socket is provided on the left side of the frame for the plug-in stand [1] included in the scope of supply.



Rebound damping function of the shock absorber

By using the adjusting screw [2], the degree of damping of the rebound can be adjusted. Turn the knob clockwise to increase damping, turn it counterclockwise to reduce damping during rebounding.

STANDARD ADJUSTMENT:

- turn the adjusting screw clockwise to the stop.
- then turn the adjusting screw counterclockwise, counting the number of clicks that corresponds to the respective type of shock absorber.

50 SX Junior:12

50 SX:10



WARNING

- Never turn the setting wheel more than two clicks between two test rides.
- Do not try to disassemble the shock absorber or to perform maintenance work yourself. Danger of injury!



Instructions for the first ride

- Make sure the work for the "pre-delivery inspection" was performed by your authorized KTM workshop. The DELIVERY CERTIFICATE and SERVICE MANUAL will be handed over when you pick up your vehicle.
- Before your youngster takes his or her first ride, explain how each of the controls works and check if your youngster has understood what you explained. We recommend to review the entire owner's manual with your youngster item by item, paying particular attention to the specially marked warnings and pointing out the danger of injury.
- Adjust the basic position of the hand brake lever to fit the size of your child's hand. Your child should of course wear gloves. Adjust the foot brake lever to your child's seating position.
- To prevent injury, teach your youngster the basic riding skills on soft ground, e.g. on a meadow or in the garden. Be sure that there is room enough to maneuver, and that no other riders are close.
- To ensure that your youngster gets the feel of the brakes, have your youngster operate the brakes while you push the motorcycle. Do not start the engine before your youngster has learned to apply both brakes with appropriate pressure.
- Now your youngster must get the feel of the throttle. Start the engine, hold the motorcycle and have your youngster slowly open the throttle. Then, your youngster can take his/her first ride. Initially, your youngster should ride back and forth between two persons who help the young rider to stop the motorcycle. However, you should also teach your youngster how to stop the motorcycle himself/herself.
- To improve his/her riding skills, your youngster should practise to ride the motorcycle standing on the footpegs or riding at the slowest possible speed. Additionally, you can arrange a series of obstacles and have your youngster drive around them, etc.
- Tell your youngster to look 3-10 m ahead, depending on the speed, to recognize and avoid obstacles. When riding through curves, the rider should also look far ahead into the curve.
- Pay attention to running-in procedure.

Running in

- Even very precisely machined sections of engine components have rougher surfaces than components which have been sliding across one another for quite some time. Therefore, every engine needs to be broken in. Do not load the engine to the power limit during the first half hour for this reason.
- Apply low but changing loads for running-in.
- **NO FULL-LOAD OPERATION DURING THE FIRST HALF HOUR!**

WARNING

- **Have your youngster wear proper protective gear whenever he or she rides the motorcycle: helmet, eye protection, chest, back, arm and leg protectors, gloves and boots. To set a good example, be sure to wear protective gear yourself whenever riding a motorcycle!**
- **The motorcycle has a centrifugal clutch. The motorcycle begins to move as soon as the throttle is opened.**
- **Always apply the front brake when starting the engine and release the brake slowly when the engine is running. An activated choke increases the idle speed of the engine, the centrifugal clutch thus beginning to engage. Therefore, the motorcycle can begin to move when the brake levers are released.**
- **When the engine speed drops to the level at which the centrifugal clutch disengages, braking with the engine is no longer possible and the motorcycle can only be slowed down using the brakes.**
- **Your child should never drive faster than its skills and the terrain permit.**
- **Never let your child drive its motorcycle unchaperoned.**
- **Replace the helmet visor or goggle glasses early enough. When light shines directly on a scratched visor or goggles, you will be practically blind.**
- **Only use accessory parts recommended by KTM.**
- **Never leave your motorcycle without supervision as long as the engine is running.**
- **KTM mini models are designed for one person only. Passengers are not allowed.**
- **These models do not comply with the regulations and safety standards established by the law. Therefore, they are not permitted on public roads.**
- **Always keep in mind that other people feel molested by excessive noise.**



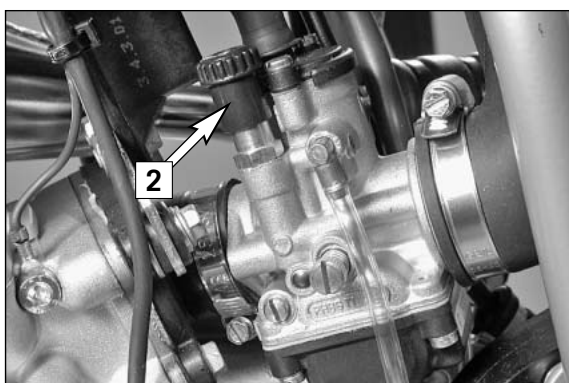
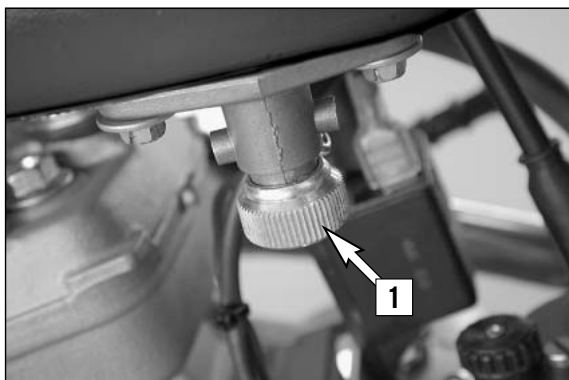
What you should check before each start

When you start off, the motorcycle must be in a perfect technical condition. For safety reasons, you should make it a habit to perform an overall check of your motorcycle before each start.

The following checks should be performed:

- 1 CHECK TRANSMISSION OIL LEVEL**
A lack of gear oil leads to premature wear and finally results in destruction of the gear wheels.
- 2 FUEL**
Check that there is sufficient fuel in the tank; when closing the filler cap, check that the tank venting hose is free of kinks.
- 3 COOLING FLUID**
Check the level of cooling fluid when the engine is cold.
- 4 CHAIN**
A loose chain may fall off the chain wheels; an extremely worn chain may tear, and insufficient lubrication may result in unnecessary wear of the chain and chain wheels.
- 5 TIRES**
Check for damaged tires. Tires showing cuts or dents must be replaced. Also check the air pressure. Insufficient tread and incorrect air pressure deteriorate the driving performance.
- 6 BRAKES**
Check for proper functioning, check brake fluid level in the tank. The tank is designed such that it does not need to be refilled, even if the brake shoes are worn. If the brake fluid falls below the minimum level, the brake system is either leaking or the brake shoes are completely worn out. Have the brake system checked at a KTM workshop to avoid brake failure. Also have the condition of the brake hose and the brake lining thickness checked.
Check the play of the hand brake lever and foot brake lever.
- 7 THROTTLE CABLE**
Check the throttle cable for proper adjustment and smooth operation.





Starting when the engine is cold

- 1 Open fuel tap [1].
- 2 Operate the choke [2].
- 3 Kick the side up all the way or remove the plug-in stand.
- 4 Apply the front brake.
- 5 Operate the kickstarter, depressing it all the way, without opening the throttle.

⚠ WARNING

- When starting the engine, put on motorcycle boots in order to avoid injuries. You may slip off the kickstarter, or the engine may kick back if you do not kick hard enough.
- Do not start the engine and allow it to idle in a closed area. Exhaust fumes are poisonous and can cause loss of consciousness and death. Always provide adequate ventilation while the engine is running.

! CAUTION

Don't ride your motorcycle with full load and high revs when engine is cold. Because the piston is warming up faster than the water cooled cylinder, it can cause engine damage.

NOTE:

The highly inflammable components in modern fuels volatilize if left standing for longer periods of time. If the motorcycle has not been used for over 1 week, the fuel should be drained from the float chamber. The engine will start up immediately if the float chamber is filled with fresh, ignitable fuel

Starting when the engine is warm

- 1 Open fuel tap [1].
- 2 Kick the side up all the way or remove the plug-in stand.
- 3 Apply the front brake.
- 4 Operate the kickstarter, depressing it all the way, without opening the throttle.

What to do when the engine is "flooded"

- 1 Close fuel tap [1].
- 2 Applying the front brake.
- 3 Start engine with full throttle. If necessary, unscrew spark plug and dry it.
- 4 Once the engine is running, open fuel tap again.

Starting off

Slowly release the brake lever while simultaneously opening the throttle.

⚠ WARNING

Always make sure the side stand is kicked all the way up or the plug-in stand removed before you let your child drive off. The motorcycle could run out of control if the stand touches the ground.



Driving

The engine speed, and thus the driving speed, are regulated by the throttle grip.

The choke must always be deactivated as soon as the engine has warmed up.

⚠ WARNING

- After falling with the motorcycle, check all its functions thoroughly before using it again.
- A bent handlebar must always be replaced. Never try to straighten the handlebar because this will cause it to lose its stability.

! CAUTION

- Driving a cold engine at high speed will reduce the life of the engine. We recommend to warm the engine up at a medium engine speed for several minutes before switching to full load.
- Never tilt the motorcycle over the side stand to warm up the engine. The side stand could fold away and the motorcycle run out of control.
- In the event that, while your child is riding on the motorcycle, you notice any unusual operation-related noise, your child should stop immediately, turn the engine off, and contact an authorized KTM dealer.

Braking

Close the throttle and squeeze both brake levers simultaneously. On sandy, wet or slippery terrain the rear wheel brake should be preferred. The brakes should always be operated carefully as locking wheels can cause skidding or falls.

⚠ WARNING

- Brake drum and linings heat up during brake operation, thus reducing the effect of the brakes.
- Wet brakes have reduced brake performance, therefore be sure to brake them dry after cleaning.
- If the resistance of the hand brake lever feels unresponsive, something is wrong with the brake system. Have the brake system checked at a KTM workshop before you let your child drive the motorcycle.

Stopping

Reduce the speed. Immediately before the motorcycle comes to a stop, put the left foot down. To turn off the engine, press the short circuit button until the engine stops. Close the fuel tap.

⚠ WARNING

Motorcycles produce great heat during operation. Therefore, keep in mind that the engine, the exhaust system and the brakes can heat up considerably. Make sure that these parts are not touched and always take care, when parking the motorcycle, that other persons will not burn themselves.

! CAUTION

- Close the fuel tap when leaving the motorcycle. Otherwise the carburetor may get flooded and fuel will enter the engine.
- The side stand or plug-in stand is designed to hold the weight of the motorcycle only. By sitting on the motorcycle, your child will put additional weight on the side stand, possibly causing the side stand or frame to be damaged or the motorcycle to fall down.

Refueling, fuel

Oil (high-grade two-stroke engine oil) must be mixed with the fuel (ROZ 95) at a mixing ratio of 1:60.

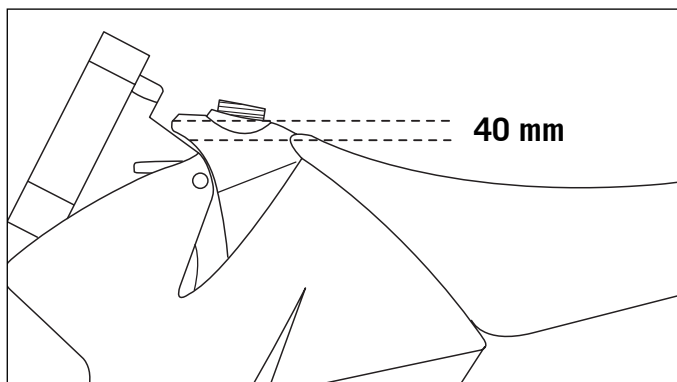
Fuel and engine oil should only be mixed immediately before use. KTM recommends Motorex 2T Cross Power.

⚠ WARNING

Gasoline is highly flammable and poisonous. Extreme caution should be used when handling gasoline. Never refuel the motorcycle near open flames or burning cigarettes. Always switch off the engine before refueling. Be careful not to spill gasoline on the engine or exhaust pipe while the engine is hot. Wipe up spills promptly. If gasoline is swallowed or splashed in the eyes, seek a doctor's advice immediately.

! CAUTION

- Only use premium-grade gasoline ROZ 95 mixed with high-grade two-stroke engine oil. Other types of gasoline can cause engine failure.
- Only use known brands of high-grade 2-stroke engine oil (Motorex 2T Cross Power).
- Not enough oil or low-grade oil can cause erosion of the piston. When using too much oil, the engine may start smoking and foul the spark plug.
- Fuel expands when its temperature rises. Therefore do not fill the tank to the top. (see fig.)



PERIODIC MAINTENANCE SCHEDULE »

50 SX JUNIOR 50 SX		Service every 5 hours	Service every 20 hours	before every race
A CLEAN MOTORCYCLE CAN BE CHECKED MORE QUICKLY WHICH SAVES MONEY!				
ENGINE	Check engine for leaks	●	●	
	Change transmission oil	●	●	
	Check spark plug, change it if necessary, set electrode gap		●	
	Check the clutch engagement speed	●	●	●
CARBURETOR	Check carburetor for a tight fit at intake flange		●	
	Check intake flange for cracks		●	
	Check idle setting when engine is warm		●	
ADD-ON-PARTS	Check cooling system for leaks, check quantity of antifreeze		●	
	Check exhaust system for leaks and suspension		●	
	Check actuating cables for damage, smooth operation, and kinkless arrangement, adjust and lubricate	●	●	●
	Clean air filter and air filter box	●	●	●
BRAKES	Check brake fluid level, lining thickness, brake discs		●	●
	Check the brake line and the brake control cable for damage		●	●
	Check/function adjust smooth operation, free travel of handbrake/footbrake levers	●	●	●
	Check screws of brake system for a tight fit	●	●	●
CHASSIS	Check suspension strut and fork for leaks and a proper function		●	●
	Check swinging-fork pivot		●	●
	Check/adjust steering-head bearing		●	●
	Check all chassis screws for a tight fit (fork plates, axle nuts, swinging-fork pivot, suspension strut)		●	●
WHEELS	Check spoke tension and rim joint	●	●	●
	Check tire condition and inflation pressure		●	●
	Check chain, chain joint, chain wheels, chain wheel guides for wear, a tight fit, and tension	●	●	●
	Lubricate chain	●	●	●
	Check wheel bearings for play	●	●	●

PERIODIC MAINTENANCE SCHEDULE »

50 SX JUNIOR 50 SX	every 20 hours	every 40 hours	once a year
ADDITIONAL SERVICE WORK TO BE PERFORMED UNDER A SEPARATE ORDER			
Check the reed-type intake valve for wear	●	●	
Check the clutch shoes for wear	●	●	
Check the clutch drum for wear	●	●	
Check the water pump shaft and bearings for wear	●	●	
Check the water pump wheel for wear	●	●	
Check the cylinder and piston for wear	●	●	
Check the eccentricity of the crankshaft journal	●	●	
Check the radial clearance of the conrod bearings	●		
Check the radial clearance of the piston pin main bearing	●		
Check the crankshaft main bearing for wear	●		
Replace the crankshaft bearings and conrod bearings		●	
Check the entire transmission including bearings for wear		●	
Drain and clean the carburetor's float chamber			●
Perform complete fork maintenance			●
Perform complete shock absorber maintenance			●
Clean and lubricate the swinging-arm bearing			●
Clean and lubricate the steering-head bearing and sealing elements			●
Change brake fluid			●

NOTE: If the inspection establishes that permissible tolerances are exceeded, the respective components must be replaced.

The kilometer reading for inspection intervals should not exceed 5 hours.

Maintenance work performed by your authorized KTM workshop is not a substitute for care and maintenance by the driver!

NOTE: A service hour counter (item no.: SXS05450600) is available from your KTM dealer for strict observance of the service intervals.

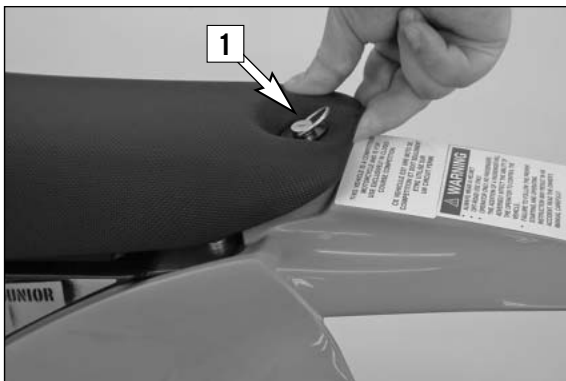
50 SX JUNIOR 50 SX	before each start	after every cleaning	for cross country use	once a year
VITAL CHECKS AND CARE PROCEDURES TO BE CONDUCTED BY THE OWNER OR THE MECHANIC				
Check transmission oil level	●			
Check cooling liquid level	●			
Check brake fluid level	●			
Check brake pads for wear	●			
Check brake performance	●	●		
Lubricate and adjust actuating cables and nipples		●		
Remove and clean dust sleeves of telescopic fork at regular intervals			●	
Clean and lubricate chain, check tension and readjust it if necessary		●	●	
Clean air filter and filter box			●	
Check tire inflation pressure and wear	●			
Check fuel line for leaks	●			
Drain and clean float chamber		●		
Verify smooth operation of all controls	●			
Treat exposed metal components (except for the brake and exhaust systems)		●		
with wax-based anti-corrosion agents				
Check all screws, nuts, and hose clamps for their tight fit at regular intervals				●

⚠ WARNING

Maintenance work and adjustments marked with an asterisk (*) must be performed by an expert. To protect your youngster, always have such work performed by a specialized KTM dealer where your motorcycle will be optimally serviced by appropriately qualified, skilled staff.

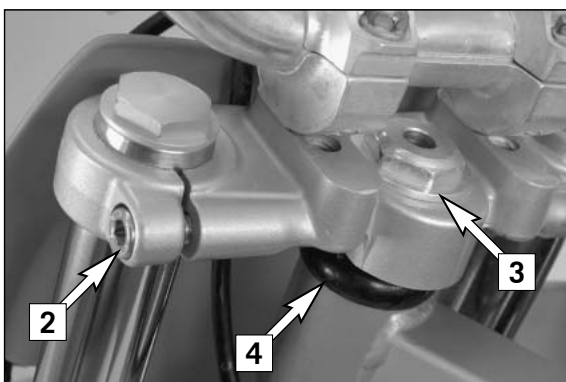
! CAUTION

- When cleaning the motorcycle, do not use a high pressure cleaning unit if possible, otherwise water will penetrate the bearings, carburetor, electric connectors, drum brakes, etc.
- Before cleaning with water, plug the exhaust pipe to prevent water ingress.
- When transporting your motorcycle, secure it with elastic straps or other mechanical devices in an upright position. Be sure that the fuel tap is closed. If the motorcycle topples over, fuel can flow out of the carburetor or fuel tank.
- Do not use toothed washers or spring rings with the engine fastening screws, as these work into the frame parts and keep working loose. Instead, use self-locking nuts.
- Let your motorcycle cool down before beginning any maintenance work in order to avoid getting burned.
- Dispose of oils, fatty matters, filters, fuels, washing detergents, etc. properly.
- Under no circumstances may used oil be disposed of in the sewage system or in the open countryside. 1 liter of used oil contaminates 1,000,000 liters of water.



Removing the seat

The quick-release mechanism [1] allows removal of the seat without tools. Turn the quick-release device approximately 180° counterclockwise, lift the rear portion of the seat and pull the seat off backwards. When mounting the seat ensure that the hook engages at the tank.



Checking and adjusting the steering head bearing (50 SX Junior) *

The steering head bearing should be checked regularly for play. For this purpose, jack up the motorcycle by the frame so that the front wheel is in the air. Now try to move the fork forward and backward. There should be no clearance. For readjustment, release the two clamp screws [2] of the top triple clamp and the counternut [3]. Turn the adjusting nut [4] until almost no play is left. Do not tighten the adjusting nut! Tightening the adjusting nut can damage the bearings! Keep in mind that tightening the counternut [3] reduces the play of the bearing. Slightly tap the top triple clamp with a rubber hammer to prevent jamming. Then tighten the 2 clamp screws with 25 Nm.

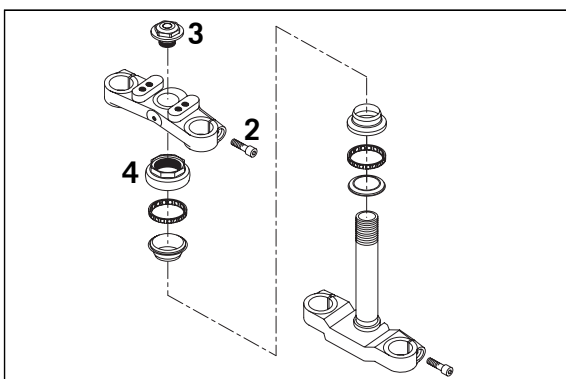
⚠ WARNING

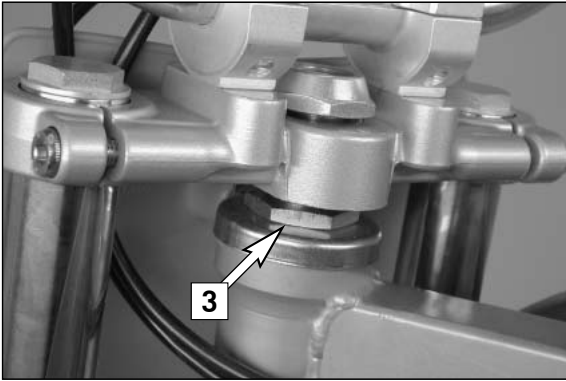
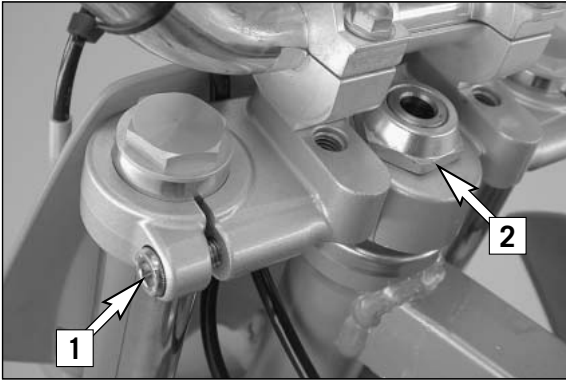
If the steering head bearing is not adjusted to be free of clearance, the motorcycle will exhibit unsteady driving characteristics and can get out of control.

! CAUTION

- The handlebar must move easily. Otherwise the bearings will be damaged.
- If you drive with play in the steering head bearing for longer periods, the bearings and subsequently the bearing seats in the frame will be destroyed.

At least once a year, the steering head bearings should be smeared with water-proof grease (Motorex Long Term 2000).





Checking and adjusting the steering head bearing (50 SX) *

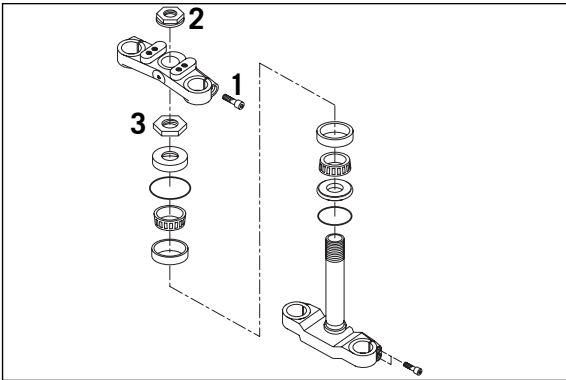
The steering head bearing should be checked regularly for play. To check, support the motorcycle frame and lift the front wheel off the ground. Now try to move the fork back and forth – you should not feel any play. To adjust, loosen both clamping screws [1] on the upper triple clamp and loosen the steering head screw [2] by a few turns. Lift the triple clamp slightly and turn the adjusting nut [3] until hardly any play is left. Never tighten the adjusting nut since you might damage the bearing. Tighten the steering head screw to a torque of 10 Nm and the 2 clamping screws to 25 Nm.

⚠ WARNING

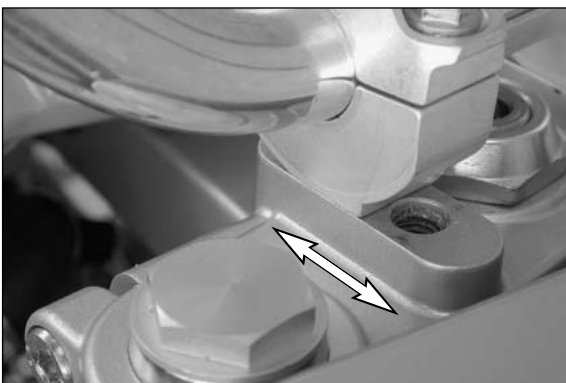
If the steering head bearing is not adjusted to be free of clearance, the motorcycle will exhibit unsteady driving characteristics and can get out of control.

! CAUTION

- The handlebar must move easily. Otherwise the bearings will be damaged.
- If you drive with play in the steering head bearing for longer periods, the bearings and subsequently the bearing seats in the frame will be destroyed.

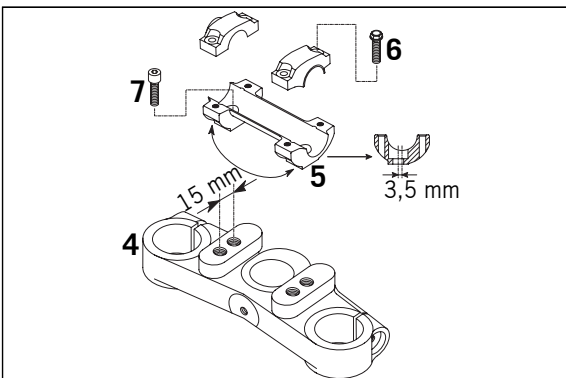


At least once a year, the steering head bearings should be smeared with water-proof grease (Motorex Long Term 2000).



How to change the handlebar position

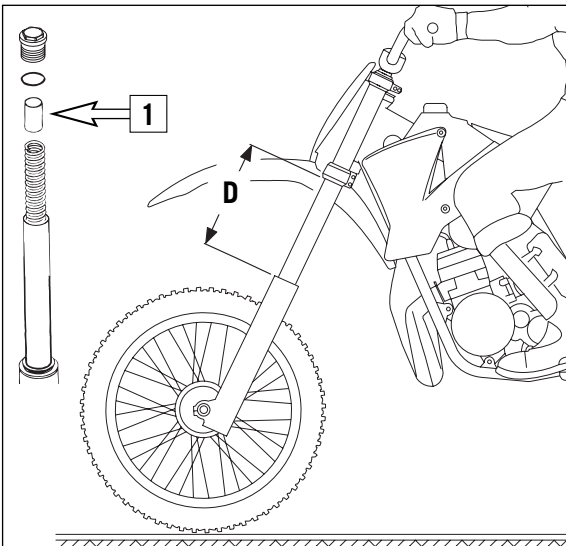
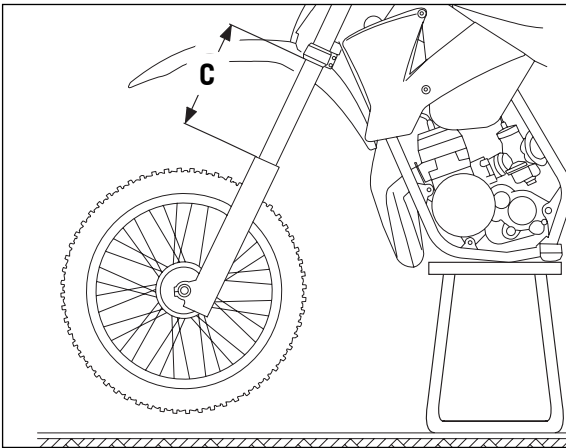
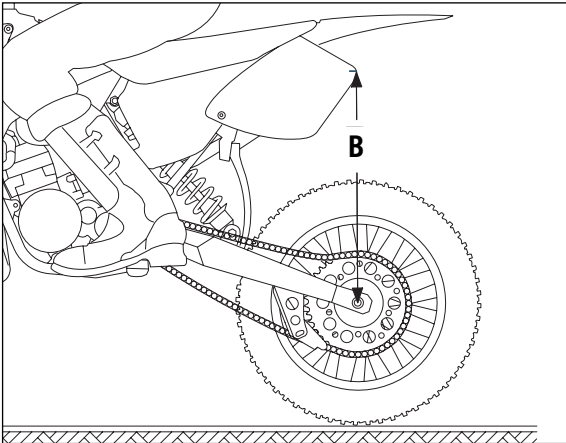
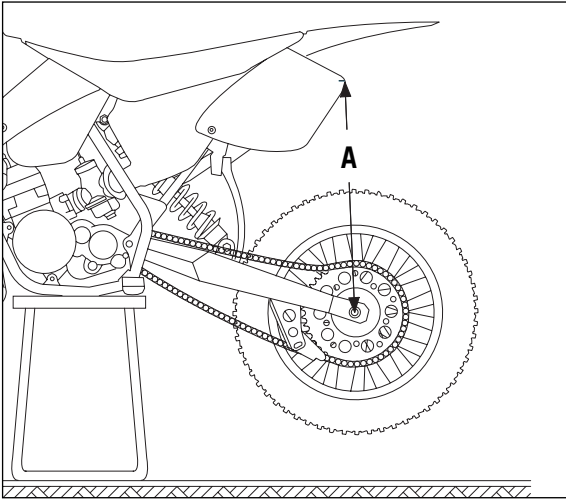
The handlebar position can be readjusted by 22 mm (0.9 in). The upper triple clamp [4] includes 2 bores arranged at a distance of 15 mm (0.6 in) from one another. The bores at the handlebar support [5] are offset from the center by 3.5 mm (0.13 in). Accordingly, you can mount the handlebar in 4 different positions.



For this purpose, remove screws [6] of the handlebar clamps and screws [7] of the handlebar support. Position handlebar support, and tighten screws [7] to 40 Nm. Mount handlebar and handlebar clamps, and tighten screws [6] to 20 Nm. The gap between the handlebar support and handlebar clamps should be the same size in the front and in the rear.

! CAUTION

The screws [7] must be secured with Loctite 243.



Basic suspension setup for the weight of the driver

To achieve maximum handling performance and to prevent the telescopic fork and shock absorber from being damaged, the basic setup of the suspension components must be suitable for your child's weight. At delivery, KTM's mini motorcycles are set to accommodate a driver weighing 25 - 30 kg (wearing full protective clothing). If your child's weight exceeds or falls short of this range, you will need to adjust the spring preload for the telescopic fork and shock absorber accordingly.

To adjust, check the sag of the shock absorber and telescopic fork. The motorcycle should be filled up and your child should be wearing full protective clothing.

To determine the sag of the shock absorber

- Jack up the motorcycle until the rear wheel no longer touches the ground.
- Measure the vertical distance between the rear wheel axle and a fixed point (e.g. a mark on the side cover) and write it down as dimension A.
- Place the motorcycle on the ground again.
- Have your child sit on the motorcycle in a normal seating position (feet on the footrests) wearing full protective clothing and bounce up and down a few times to allow the rear wheel suspension to become level.
- Holding your child and the bike, have another person measure the distance between the same two points with the load on the motorcycle to establish dimension B.
- The sag is the difference between dimensions A and B.

EXAMPLE:

Motorcycle jacked up (dimension A) 400 mm
Motorcycle on ground with driver seated (dimension B) – 355 mm
 Sag 45 mm

50 SX Junior shock absorber sag 45 mm (± 5 mm)
 50 SX shock absorber sag 50 mm (± 5 mm)

If the sag is lower, the spring preload of the shock absorber must be reduced, if the sag is higher, the spring preload must be increased (see Changing spring preloading of the shock absorber). A harder spring is also available for the 50 SX (see spare parts catalog).

To determine the sag of the telescopic fork

- Jack up the motorcycle until the rear wheel no longer touches the ground.
- Measure the distance between the upper edge of the slider tube and the triple clamp and write it down as dimension C.
- Have your child sit on the motorcycle in a normal seating position (feet on the footrests) wearing full protective clothing, and bounce up and down a few times to allow the telescopic fork to become level.
- Holding your child and the bike, have another person measure the distance between the same two points with the load on the motorcycle to establish dimension D.
- The sag is the difference between dimensions C and D.

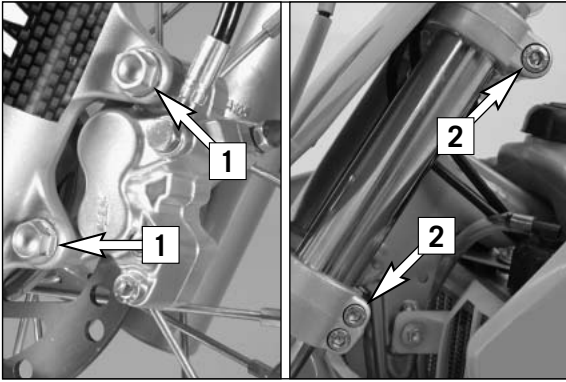
EXAMPLE:

Motorcycle jacked up (dimension C) 200 mm
Motorcycle on ground with driver seated (dimension D) – 160 mm
 Sag 40 mm

50 SX Junior telescopic fork sag 30 mm (± 5 mm)
 50 SX telescopic fork sag 45 mm (± 5 mm)

If the sag is lower, the spring preload of the telescopic fork must be reduced, if the sag is higher, the spring preload must be increased.

The preload on the fork spring is determined by the length of preload spacer [1]. If an adjustment is necessary, demount the fork legs, remove the plugs and shorten the pretensioning sleeves or replace with longer ones (see maintenance of telescopic fork). Harder fork springs are also available for both models (see spare parts catalog).



Telescopic fork maintenance *

The telescopic fork must be serviced at least once a year.

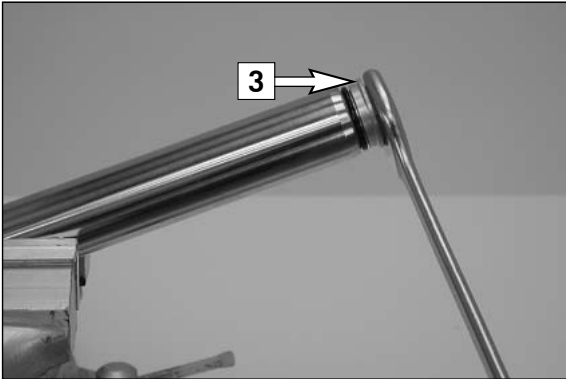
To service the fork, proceed as follows:

Prop up the motorcycle under the frame to take the load off the front wheel. Disassemble the front wheel, remove screw [1] from the brake caliper and unscrew holding clamp. Measure the projection of the fork legs at the upper fork stabilizer and make a note of the measurement.

Loosen the clamping screws [2] on the fork stabilizers and pull the fork legs down out of the fork stabilizers.

! CAUTION

- Do not operate the hand brake when the front wheel has been dismantled.
- Make sure the brake disc is always on top when you lay down the wheel, otherwise the brake disc can be damaged.



Clamp the fork leg into a vise (use protective jaws) and remove the plugs [3]. Take the preload spacer and the spring out of the fork tube.

Remove screws [4] at the underside of the slider tubes and pull the fork tubes out of the slider tubes.

Remove the dust scrubbers [5].



Thoroughly clean all parts and check for wear.

Generously lubricate seals and springs and reassemble the telescopic fork.

Tighten the screws on the bottom of the sliding tubes to 30 Nm.

Fill in fork oil and assemble the fork (see below). Degrease the screws on the brake caliper and apply Loctite 243. Mount the brake caliper and tighten to 20 Nm. Mount brake line and holding clamp.

Insert fork legs in the fork stabilizers (projection as previously noted) and tighten clamping screws to 25 Nm (top) and 10 Nm (bottom).

Mount front wheel (see chapter: mounting the front wheel).

⚠ WARNING

The screws [1] must be secured with Loctite 243.



Changing the telescopic fork oil *

Remove front wheel and fork legs (see above).

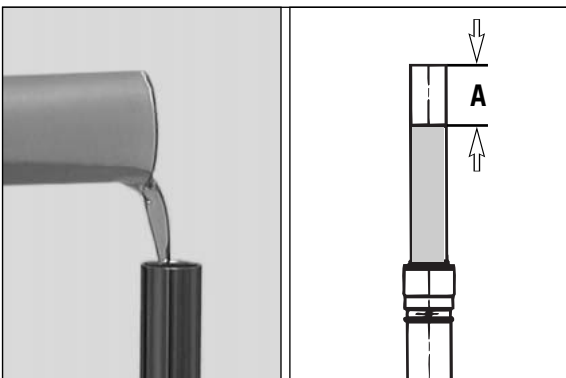
Remove plugs, preload spacers and springs.

Drain the fork oil into an appropriate container.

Clean the dust scrubbers.

⚠ WARNING

- It is very important to keep the brake disk free from oil and fatty matters. Otherwise, the braking effect would be strongly reduced.
- After working on the brake system, always operate the hand brake lever to apply the brake shoes to the brake disk and have a point of pressure.



Pour 170 cm³ SAE 7.5 fork oil into each fork tube.

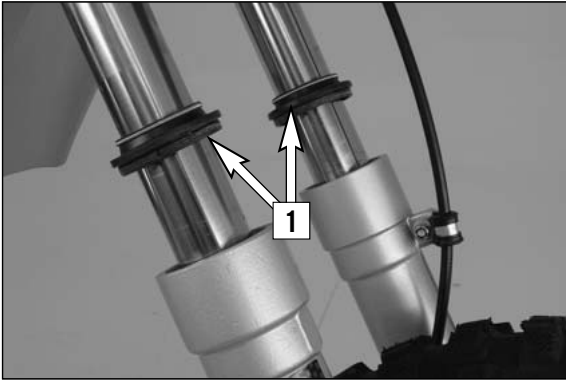
Slide the fork tube all the way into the slider tube.

Adjust the air-chamber length [A] to 110 mm (4.5 in) by extracting or adding fork oil.

Insert springs and pretensioning sleeves into the fork tube.

Check O-rings, grease and mount plugs.

Mount the fork legs, front wheel and brake caliper (see above).



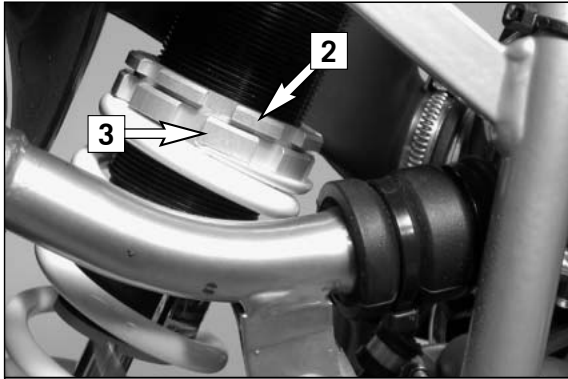
Cleaning the dust scrabbers of the telescopic fork

The dust-protection bellows [1] are to remove dust and coarse dirt particles from the fork tube. However, after some time, dirt may also get in behind the dust-protection bellows. If this dirt is not removed, the oil sealing rings located behind it may start to leak.

For this purpose, use a screwdriver to lift the dust scrabbers out of the slider tubes, clean them thoroughly with compressed air, spray the fork tubes and dust scrabbers with Universal oil spray (Motorex Joker 440) or engine oil. Then, push the dust-protection bellows into the outer tubes by hand.

⚠ WARNING

No oil may reach the front tire or the brake disks since this would considerably reduce the tire's road grip and the braking effect of the front brake.



Changing spring preloading of the shock absorber

This is easily done.

NOTE: Before changing the spring preload note down the basic setting, e.g. how many threads are visible above the adjusting ring.

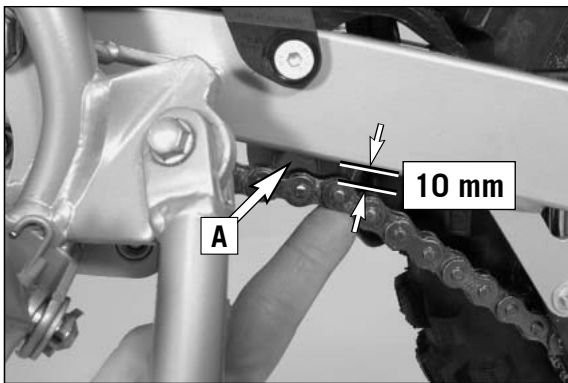
Remove the right side cover.

Loosen the locking ring [2] with the hook spanner. Change the spring preload with the adjusting ring [3] and re-tighten the locking ring [2].

BASIC SETTING – SPRING PRELOAD:

50 SX Junior:5 mm (0.2 in)

50 SX:3 mm (0.12 in)



Check chain tension

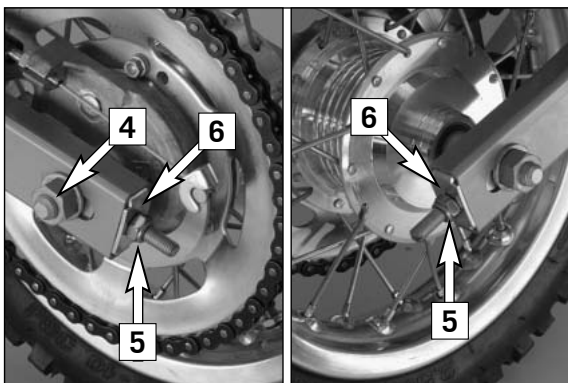
Put the motorcycle on the sidestand.

Chain tension has to be checked close to the lower rear shock mounting [A]. When pushing the chain upwards, the distance to the swingarm has to be 10 mm (0.4 in).

If necessary, correct chain tension.

⚠ WARNING

- If chain tension is too great, parts within the secondary transmission (chain, chain wheels, gear box and rear wheel bearings) will be subjected to unnecessary stress, resulting in premature wear and even chain breakage.
- Too much slack in the chain, on the other hand, can result in the chain jumping off the chain wheels. If this happens, the chain could also block the rear wheel or damage the engine. In either case the operator is likely to lose control of the motorcycle.
- Be careful not to get your finger caught between the chain and the rear sprocket or other components.



Correct chain tension

Release the hexagon nut of the wheel spindle [4] and turn the left and the right hexagon nut [5] equally far.

Before tightening the hexagon nut of the wheel spindle to 40 Nm, ensure that the supporting plates [6] are resting against the swing arm. Additionally, check that the rear wheel is aligned with the front wheel.

Chain maintenance

For long chain life, good maintenance is very important. Chains without O-rings should be cleaned in fireproof solvent regularly and afterwards treated with hot grease or chain spray (Motorex Chainlube Racing).

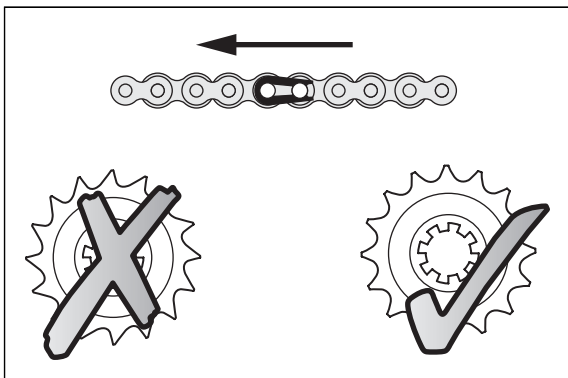
⚠ WARNING

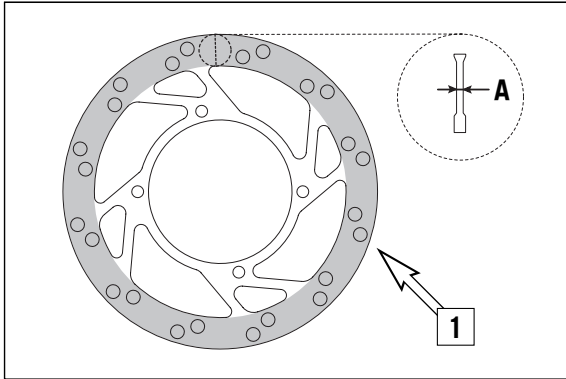
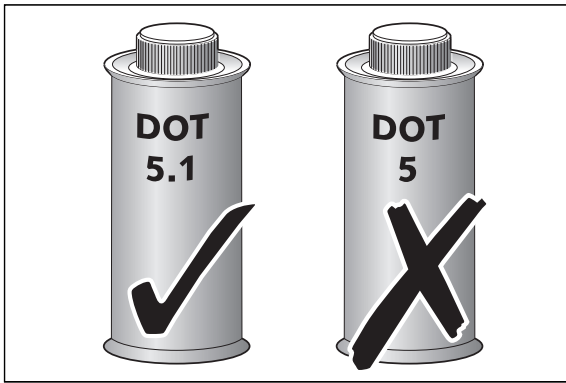
Keep the rear wheel free of grease! Grease on the rear wheel will significantly reduce the grip of the rear tire and the motorcycle could easily get out of control.

! CAUTION

When mounting the chain masterlink clip, the closed side of the masterlink clip must point in running direction.

Also check sprockets and chain guides for wear, and replace if necessary.





General information about KTM disc brakes

BRAKE FLUID RESERVOIRS:

The brake fluid reservoirs for the front brake is designed such that it does not need to be refilled, even if the brake shoes are worn. If the brake fluid level drops below the minimum level either the brake system has a leak or the brake pads are completely worn.

In this case, consult an authorized KTM dealer immediately.

BRAKE FLUID:

We recommend that you use Motorex DOT 5.1 brake fluid when you refill or change the brake fluid. DOT 5.1 brake fluid has a wet boiling point of 180°C / 356°F (25°C / 45°F higher than DOT 4) and is safer for high performance applications. Brake fluid DOT 5.1 is a polyethylene glycol based fluid, amber-colored and can be mixed with DOT 4 brake fluid. **Do not, in any event, use DOT 5 brake fluid.** It is based on silicone oil and is dyed purple. KTM motorcycle gaskets and brake hoses are not designed for DOT 5 brake fluid.

⚠ WARNING

Have the brake fluid changed at least once annually. If you wash your motorcycle often, the brake fluid should be changed even more frequently. Brake fluid tends to absorb water. Therefore, vapor pockets may form in "old" brake fluids even at low temperatures, causing the brake system to fail.

BRAKE DISC:

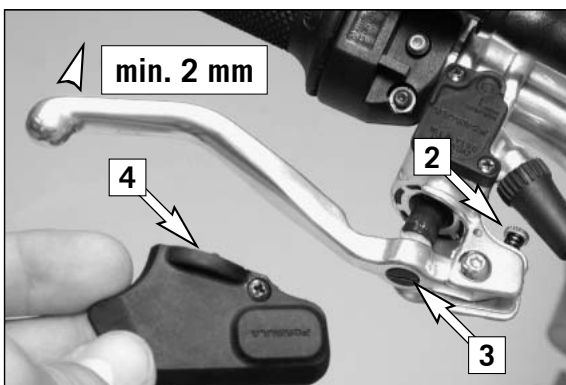
Due to wear, the thickness of the brake disc in the area of the contact face [1] of the brake pads decreases. The brake disk must be at least 2.50 mm thick at the thinnest point [A]. Check the thickness of the brake disk at several points.

⚠ WARNING

- A brake disk worn down to less than 2.50 mm is a safety risk. Have the brake disk replaced as soon as it reaches the service limit.
- Have any repairs on the brake system be performed by a KTM dealer.

BRAKE CALIPERS:

Secure the screws on the brake caliper with Loctite 243 and tighten to a torque of 20 Nm.

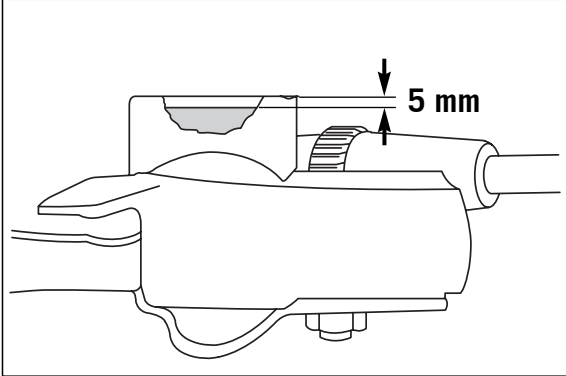
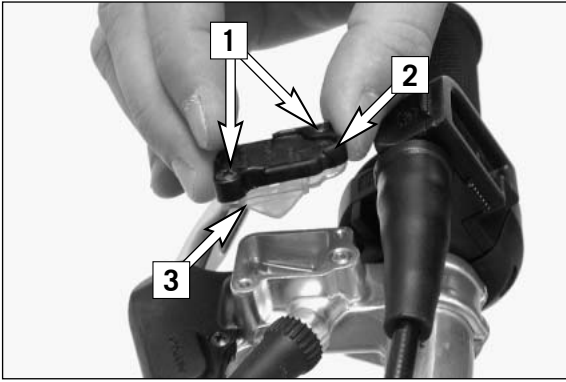


Setting the basic position and play of the hand brake lever *

You can adjust the basic position of the hand brake lever to fit your child's hand by turning stop screw [2]. Afterwards, be sure to adjust the play of the hand brake lever to 2 mm (0.08 in) with the adjusting screw [3]. To adjust, remove covering cap [4]. Replace the covering cap after making the adjustment.

! CAUTION

At the hand brake lever, free travel must at least be 2 mm (0.08 in). Only then may the piston in the hand brake cylinder be moved (to be recognized by the greater resistance of the hand brake lever). If this free travel is not provided, pressure will build up in the braking system, and the front-wheel brake may fail due to overheating.



Checking the brake fluid level / refilling *

The brake fluid reservoir is combined with the hand brake cylinder on the handlebar. To check the brake fluid level, press the brake pistons back into the basic position. Move the hand brake cylinder in a horizontal position, remove the screws [1] and the cover [2] with the diaphragm [3]. The brake fluid level should be 5 mm below the upper edge of the reservoir (see drawing), otherwise add DOT 5.1 brake fluid (e.g. Motorex Brake Fluid DOT 5.1) up to 5 mm below the upper edge of the reservoir.

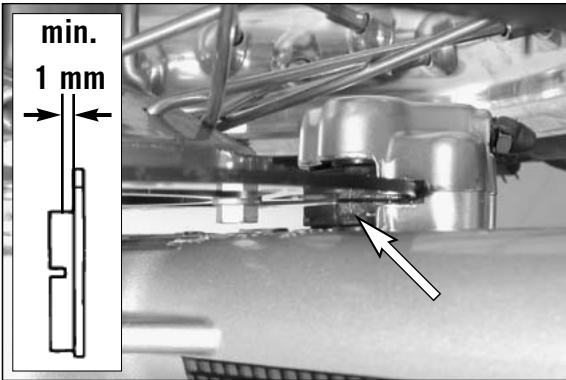
Mount the diaphragm, the cover and the screws and actuate the hand brake lever until you feel the point of pressure again. Wipe off any overflowing or spilled brake fluid with water.

⚠ WARNING

- Actuate the hand brake lever until you feel the point of pressure again.
- Never use DOT 5 brake fluid! It is based on silicone oil and of a purple color. Seals and brake hoses must be especially adapted to it.
- Store brake fluid out of reach of children.
- Brake fluid can cause skin irritation. Avoid contact with skin and eyes. If you get brake fluid in your eyes, rinse with plenty of water and consult a doctor.

! CAUTION

- Don't let brake fluid get in contact with paint, it is an effective paint remover.
- Use only clean brake fluid taken from a tightly sealed container.



Checking front brake pads

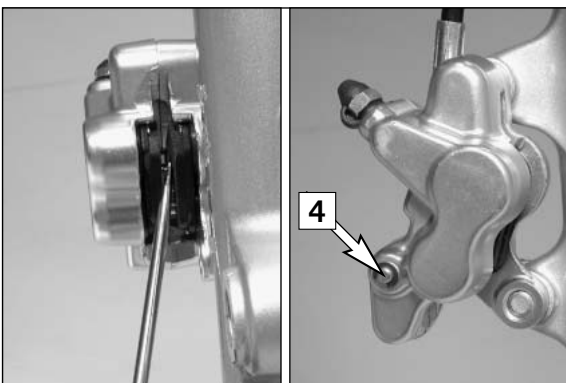
Inspect the brake pads from in front of the vehicle. The linings must be at least 1 mm (0.04 in) thick.

⚠ WARNING

At their most worn point brake pad linings should not be thinner than 1 mm (0.04 in), otherwise they could lead to brake failure. For your own safety don't put off having your brake pads changed.

! CAUTION

If the brake pads are replaced too late so that the lining is partly or entirely worn, the steel components of the brake pad will rub against the brake disc, thereby impairing the braking effect and destroying the brake disc.

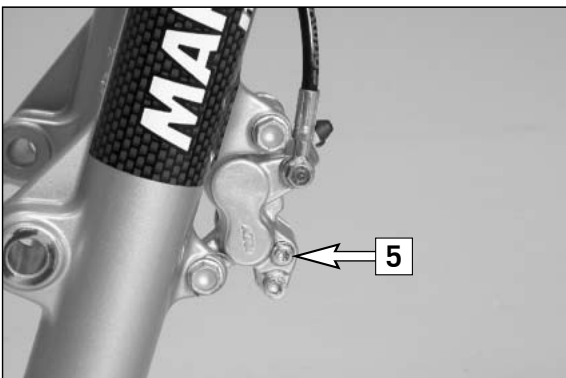


Replacing the front brake pads *

Remove the front wheel (see front wheel chapter).

Press brake shoes apart with a suitable screwdriver to put the brake pistons in their basic position.

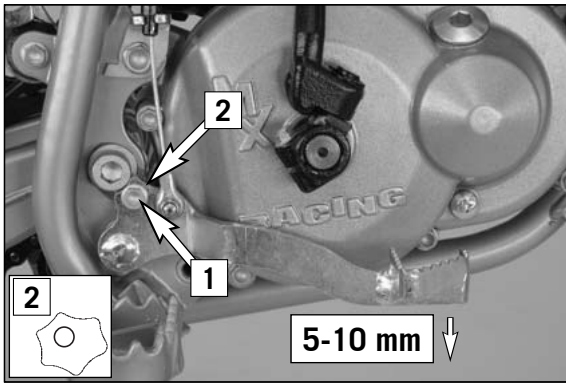
Remove the lock washer [4] from the screw as well as fixing screw [5] and take the brake shoes out of the brake caliper. Clean brake caliper thoroughly with compressed air.



Mount the left brake shoe and fix with screw. Mount the right brake shoe and tighten the screw to 4 Nm. Mount the lock washer. Align brake shoes, mount front wheel (see chapter: Mounting the front wheel).

⚠ WARNING

- It is very important to keep the brake disc free from oil and fatty matters. Otherwise, the braking effect would be strongly reduced.
- After assembly, check if circlips have been fitted correctly.
- Do not unscrew any other screws on the brake caliper or you will have to bleed the brake system.
- After working on the brake system always operate the hand brake lever to apply the brake pads to the brake disc and create a point of pressure.



Changing the basic position of the foot brake lever (50 SX Junior)

The basic position of the foot brake lever can be changed by unscrewing screw [1] and then turning the retainer [2].

Afterwards, check the setting of the rear wheel brake.

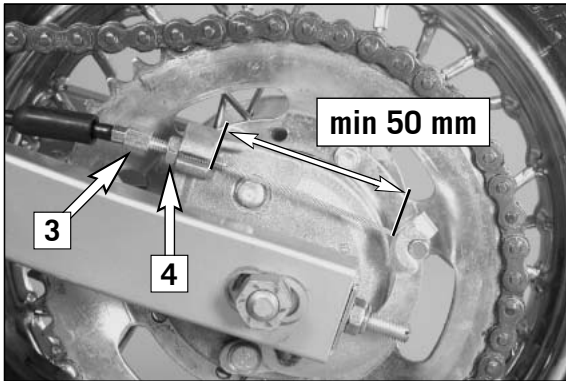
Adjusting the control cable on the rear wheel (50 SX Junior)

You should be able to press the foot brake lever 5 to 10 mm (0.2-0.4 in) before the rear wheel begins to brake.

The brake control cable is adjusted with adjusting screw [3] on the brake anchor cover. First loosen lock nut [4] and then tighten again.

! CAUTION

After making adjustments, always make sure the wheel turns freely.

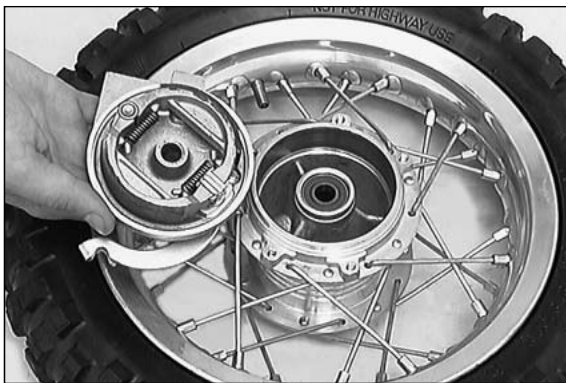


Checking the rear brake linings for wear (50 SX Junior)

The brake linings must be replaced when the distance between the hub brake lever and the cable support, measured with the brake lever squeezed, is less than 50 mm (2 in) (see illustration).

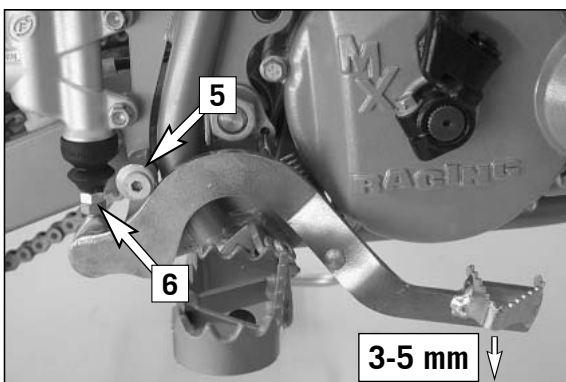
! CAUTION

If the brake linings are replaced too late, i.e. when the lining is partly or fully worn away, the metal shoes will rub against the brake drum, thus reducing the braking effect and destroying the brake drum.



Drum brake maintenance (50 SX Junior)

Drum brake maintenance is limited to occasional blowing out of the brake drum and brake shoes. Brake drum and brake linings can be slightly roughened with an abrasive tape.



Changing the basic position of the foot brake lever (50 SX) *

The basic setting of the foot brake pedal can be changed by turning the end stop roller [5]. Using the push rod [6], the free play on the foot brake pedal must be set.

Measured on the outside, the foot brake pedal must have 3-5 mm of free play, before the push rod can move the piston in the brake cylinder (to be recognised from the resistance on the foot brake pedal)

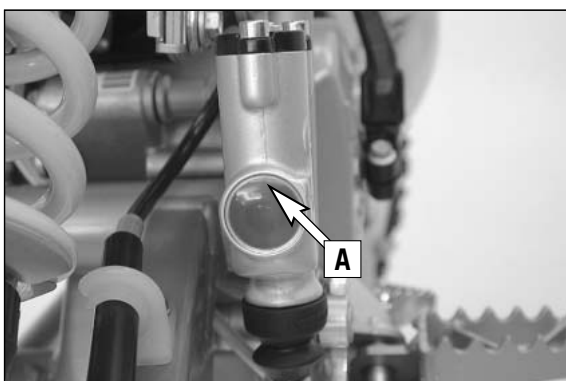
Checking the rear brake fluid level (50 SX)

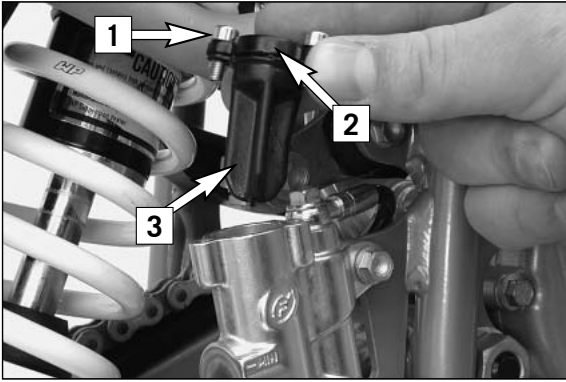
The reservoir for the rear disk brake is on the right side of the motorcycle on the rear brake cylinder.

No air bubble should be visible in inspection glass [A] when the vehicle is parked in a vertical position.

⚠ WARNING

If the brake fluid level drops below the upper edge of the inspection glass, this indicates that the brake system is either leaking or the brake shoes completely worn.





Refilling the rear brake fluid reservoir (50 SX) *

Remove the screws [1] and take off the cover [2] and diaphragm [3]. The brake pistons must be pushed back to their basic position. Fill DOT 5.1 brake fluid (e.g. Motorex Brake Fluid DOT 5.1) up to 10 mm under the upper edge of the reservoir.

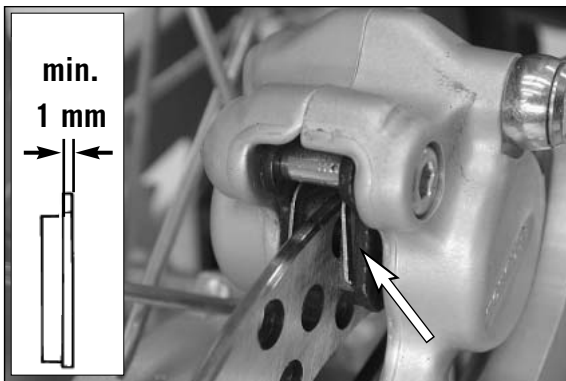
Remount the diaphragm, cover and screws and actuate the foot brake lever until you feel the point of pressure again. Wipe any overflowing or spilled brake fluid off with water.

⚠ WARNING

- Actuate the foot brake lever until you feel the point of pressure again.
- Never use DOT5 brake fluid! It is based on silicone oil and of a purple color. Seals and brake hoses must be especially adapted to it.
- Store brake fluid out of reach of children.
- Brake fluid can cause skin irritation. Avoid contact with skin and eyes. If you get brake fluid in your eyes, rinse with plenty of water and consult a doctor.

! CAUTION

- Don't let brake fluid get in contact with paint, it is an effective paint remover.
- Use only clean brake fluid taken from a tightly sealed container.



Checking the rear brake pads (50 SX)

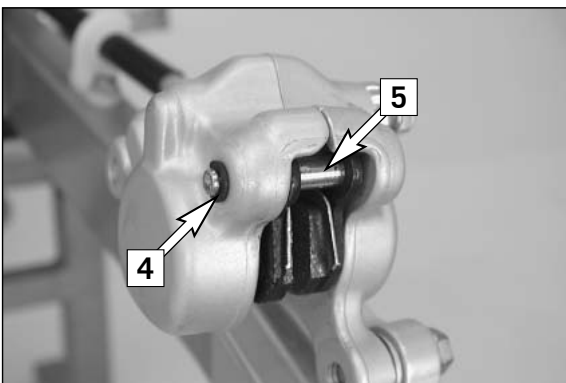
The brake pads can be inspected from the rear. The thickness of the linings may not be less than 1 mm (0.04 in).

⚠ WARNING

At their most worn point brake pad linings should not be thinner than 1 mm, otherwise they could lead to brake failure. For your own safety don't put off having your brake pads changed.

! CAUTION

If the brake pads are replaced too late so that the lining is partly or entirely worn, the steel components of the brake pad will rub against the brake disc, thereby impairing the braking effect and destroying the brake disc.



Replacing the rear brake pads (50 SX) *

Dismount the rear wheel (see "Dismounting the rear wheel").

Press the brake shoes apart with a suitable screwdriver to allow the brake pistons to return to their basic position.

Remove the locking screw [4], unscrew the screw [5] and pull the brake shoes out of the brake caliper.



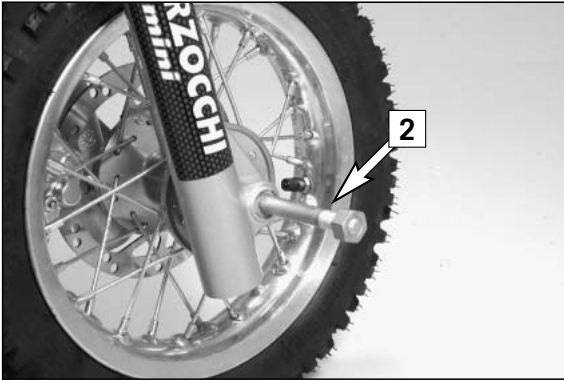
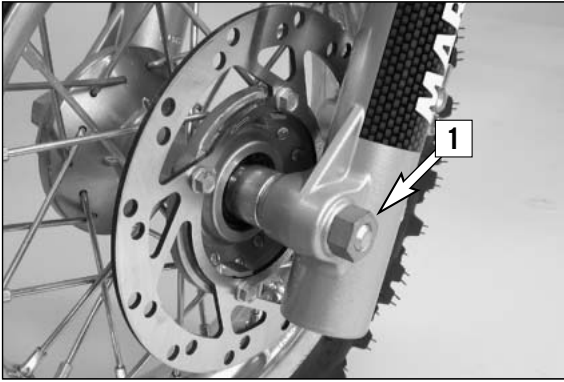
Slide new brake shoes into the brake caliper and fasten with the screw [5].

Tighten the screw to 10 Nm and mount the locking screw [4].

Mount the rear wheel and actuate the foot brake lever until you can feel the pressure point.

⚠ WARNING

- It is very important to keep the brake disk free from oil and fatty matters. Otherwise, the braking effect would be strongly reduced.
- After assembly, check if circlips have been fitted correctly.
- After working on the braking system, one must always actuate the hand brake lever or foot brake lever, respectively so as to ensure that the brake pads will lie against the brake disk and the pressure point is established.



Removing and mounting the front wheel

Jack the motorcycle up by the frame so that the front wheel is suspended above the ground.

Undo the hexagon nut [1] and remove it together with the washer.

Hold the front wheel and pull out the wheel spindle [2].

Carefully take the front wheel out of the fork.

! CAUTION

- Do not operate the hand brake when the front wheel has been dismantled.
- Make sure the brake disc is always on top when you lay down the wheel, otherwise the brake disc can be damaged.

Lift the front wheel into the fork and correctly position it.

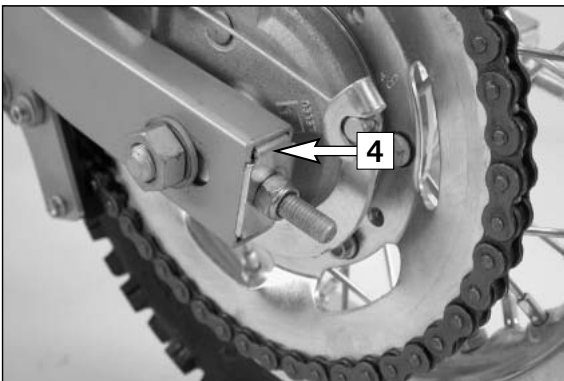
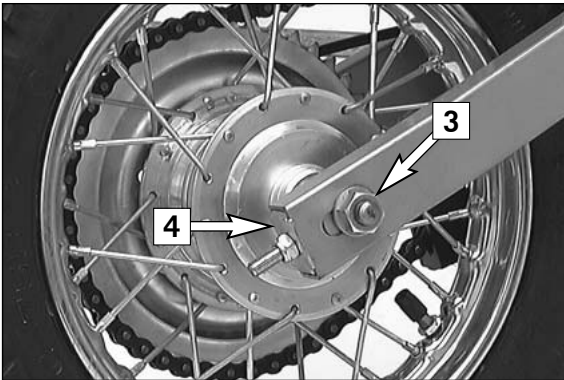
Mount the wheel spindle [2].

Mount the washer and the hexagon nut [1] and tighten 40 Nm.

Put the motorcycle back on the ground and operate the front wheel brake until the working point is reached.

⚠ WARNING

- If you don't happen to have a torque wrench at hand, make sure you have the tightening torque corrected by a KTM dealer as soon as possible. A loose axle may lead to an unstable driving behavior of your motorcycle.
- After mounting the front wheel, keep operating the hand brake until the pressure point returns.
- It is very important to keep the brake disk free from oil and fatty matters, otherwise the braking effects would be strongly reduced.



Removing and mounting the rear wheel

Prop up the motorcycle under the frame.

Remove hexagon nut [3] on the wheel spindle and disk.

Hold the rear wheel and remove the wheel spindle.

Move the rear wheel forwards, remove chain, lift the rear wheel out of the swinging fork and remove the brake anchor.

! CAUTION

- Do not operate the rear brake when the rear wheel has been dismantled.
- Make sure the brake disc is always on top when you lay down the wheel, otherwise the brake disc can be damaged (50 SX).

To mount the wheel reverse the procedure described above.

Always hook the brake backing plate into the swing arm support.

Before tightening the hexagon nut of the wheel spindle, ensure that the supporting plates [4] are resting against the swing arm. Additionally, check that the rear wheel is aligned with the front wheel.

Tighten the hexagon nut to 40 Nm.

⚠ WARNING

- If you don't happen to have a torque wrench at hand, make sure you have the tightening torque corrected by a KTM dealer as soon as possible. A loose axle may lead to an unstable driving behavior of your motorcycle.
- After mounting the rear wheel, keep operating the rear brake until the pressure point returns (50 SX).
- It is very important to keep the brake disk free from oil and fatty matters, otherwise the braking effects would be strongly reduced (50 SX).



Tires, air pressure

Tire type, tire condition, and air pressure level affect the way your motorcycle rides, and they must therefore be checked whenever you are getting ready to go anywhere on your motorcycle.

- Tire size can be found in the technical specifications.
- Tire condition has to be checked every time you want to ride your motorcycle. Before leaving, check tires for punctures and nails or other sharp objects that might have become embedded in them.
- Regularly check the "cold" tire pressure. Correct tire pressure (1.0 bar / 14 psi) guarantees optimum grip and maximum tire life.

⚠ WARNING

- **Damaged tires must be replaced immediately to protect your youngster.**
- **Worn tires can have a negative effect on how the motorcycle performs, especially on wet surfaces**
- **Tire pressure below the normal level will lead to premature tire wear.**

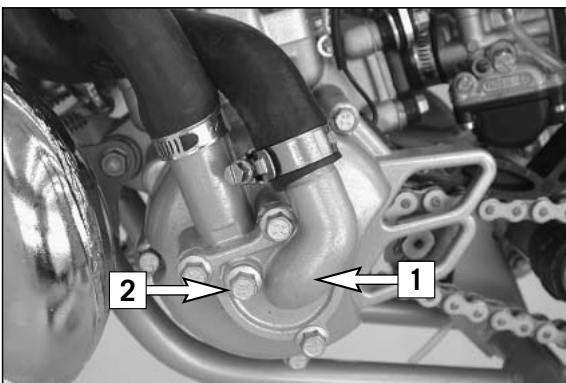


Checking spoke tension

The correct spoke tension is very important for the stability of the wheels and thus for riding safety. A loose spoke causes the wheel to become unbalanced and before long other spokes will have come loose. Check spoke tension, especially on a new motorcycle, at regular intervals. If necessary, have the spokes retightened and the wheel centered by a KTM dealer.

⚠ WARNING

- **Spokes can tear if you continue to ride with them loose. This may lead to an unstable handling of your motorcycle.**
- **Excessively tensioned spokes may rupture due to local overloading. The spokes must be tensioned to 2.5 - 3 Nm.**



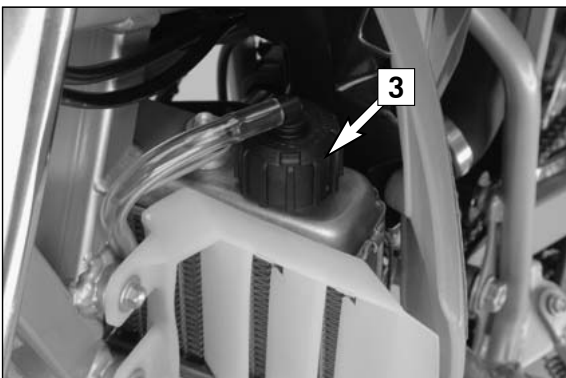
Cooling system

The water pump [1] in the engine keeps the cooling liquid in circulation. The cooling liquid is cooled by the air stream. Therefore, the cooling effect is reduced when the traveling speed is reduced. Dirty radiators additionally reduce the cooling effect.

The cooling liquid can be drained by removing screw [2] on the water-pump cover.

⚠ WARNING

Do not remove any cooler hoses or the drain screw when the engine is hot.

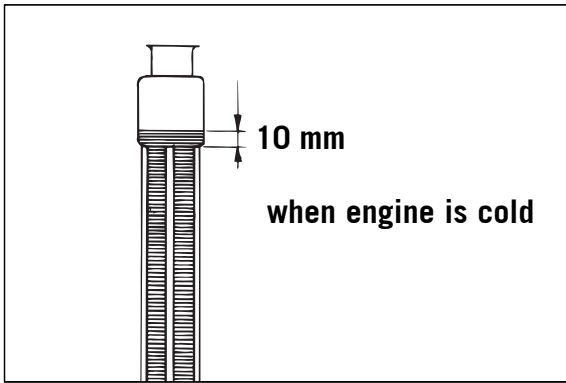


A mixture of 50 % antifreeze and 50 % distilled water is used as the cooling liquid. However, the antifreeze protection must be at least -25° C (-13° F). This mixture offers antifreeze protection but also good corrosion protection and should therefore not be replaced by pure water.

! CAUTION

For the cooling system, use only with high-grade antifreeze (Motorex Anti-Freeze). Using lower-grade antifreeze agents can cause corrosion and coolant foaming.

Pressure induced by heating of the coolant in the system is controlled by a valve in the radiator cap [3]; a water temperature rising up to 120° C (248° F) is admissible without fear of problems.

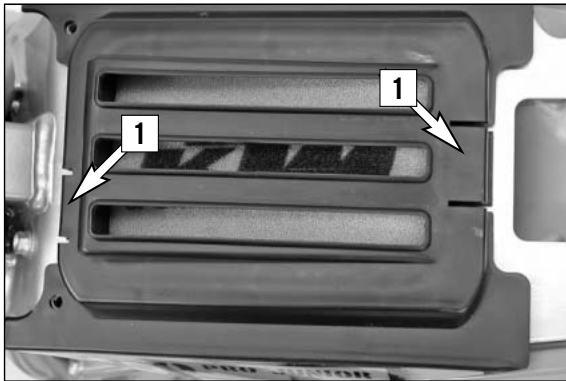


Checking coolant level

The coolant should be 10 mm (0.4 in) above the radiator fins when the engine is cold (see illustr.). In the event of the coolant being drained, always fill and bleed the system.

⚠ WARNING

If possible, always check level of cooling liquid when engine is cold. If you have to open the radiator cap when the engine is hot, use a rag to cover the cap and open slowly to release pressure.

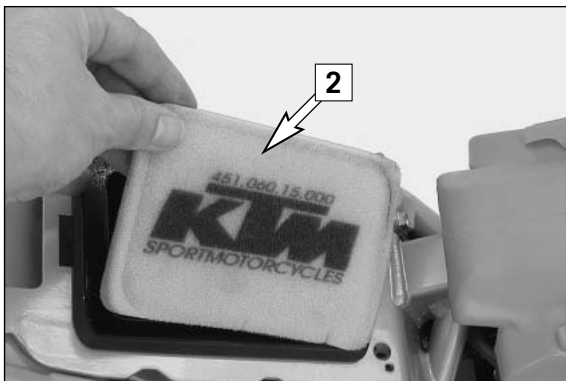


Cleaning the air filter *

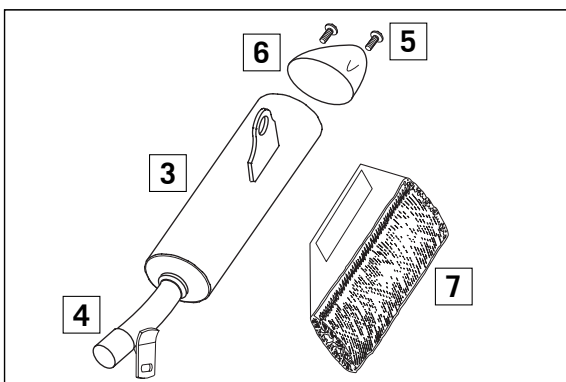
The air filter must be cleaned at intervals depending on the amount of dust accumulated. To clean the air filter, first remove the seat. Then press both retaining clips [1], remove the filter holder and the air filter [2]. The air filter consists of a foam rubber insert soaked with filter oil.

! CAUTION

- Do not clean the foam filter with fuel or petroleum since these will damage the foam. KTM recommends the products (Motorex Liquid Bio Power) for air filter maintenance.
- Never operate your motorcycle without an air filter. Otherwise, dust and dirt may get into the engine and lead to increased wear.
- The holder must retain the air filter throughout its entire circumference. If the filter has been mounted incorrectly, the engine will take in unfiltered air, thereby causing increased engine wear.



Thoroughly wash the foam filter in special cleaning fluid (Motorex Bio Dirt Remover) and allow it to dry well. Only press out the filter, do not wring it out under any circumstances. Oil the dry foam filter with a high-grade filter oil (Motorex Liquid Bio Power). Also clean the air filter box. Check carburetor collar for damage and that it is filled correctly. Insert the air filter in the opening and fasten it with the filter holder. Then mount the seat.



Exhaust system *

The silencer is filled with glass-fiber yarn for damping. When in use, the glass-fiber yarn becomes loose or coked with oil carbon. This can lead to a power loss and a reduction of the silencer damping. The glass-fiber yarn packing can be replaced in a few easy steps.

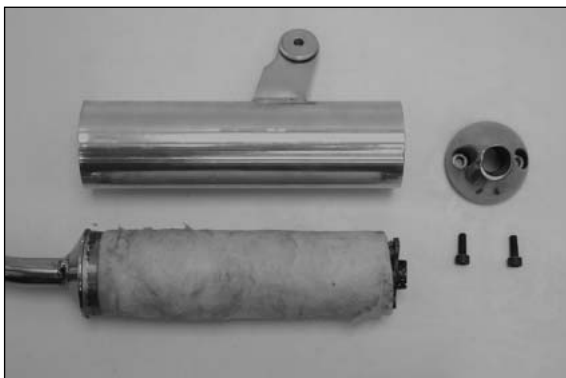
To replace, remove the silencer from the vehicle and mark the position of the outer tube [3] to the inner tube [4]. Remove screws [5] and the end cap [6]. Pull off the outer tube and remove the old glass-fiber yarn packing [7] from the inner tube. Thoroughly clean all parts.

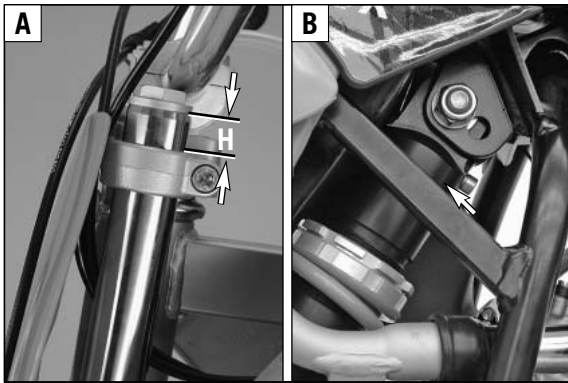
To assemble, mount a new glass-fiber yarn packing onto the inner tube (see illustration) and slide into the outer tube. Mount end cap and fix with screws [5]. Before tightening the screws, turn the outer tube until they match the positions you marked. Mount the silencer and check the exhaust system for tightness.

Note: Glass fiber yarn packages are offered by your licensed KTM dealer.

⚠ WARNING

The exhaust system becomes very hot while the motorcycle is running. to avoid burns do not start work on the exhaust system until it has properly cooled down.



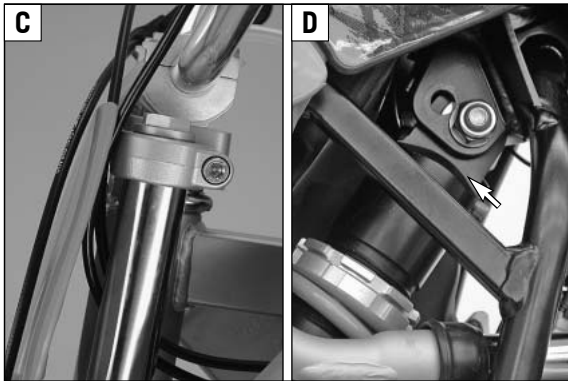


Changing the seat height

The saddle can easily be raised by 25 mm (1 in). This lets you adjust the height as your child grows.

Figures A and B show the fork and shock absorber positions for a low seat position. The fork tubes extend approx. 17 mm (0.7 in) (H) above the upper fork stabilizer. The shock absorber is attached to the upper hole in the frame. Tighten the clamp screws on the fork stabilizers to 25 Nm (top) and 10 Nm (bottom), the screw on the shock absorber to 45 Nm.

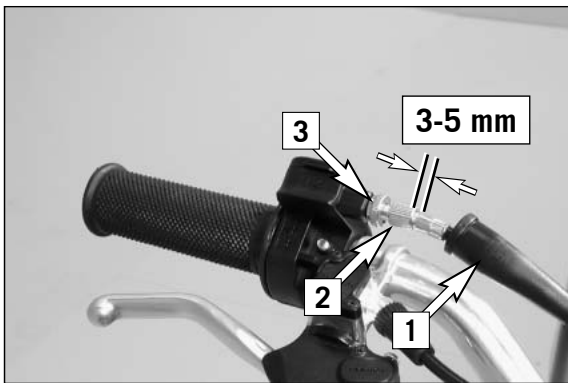
Figures A and B: low seat position
Figures C and D: high seat position



Figures C and D show the fork and shock absorber positions for a high seat position. Fork tubes are plane with top of upper fork stabilizer. (Screw cap (Aluminium) protrudes from the top of the upper fork stabilizer) The shock absorber is attached to the lower hole in the frame. Tighten the clamp screws on the fork stabilizers to 25 Nm (top) and 10 Nm (bottom), the screw on the shock absorber to 45 Nm.

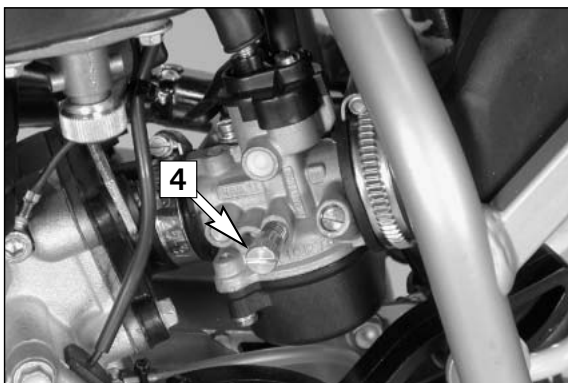
⚠ WARNING

The fork tubes may not be lowered any further than as described above, otherwise the clamping on the upper fork stabilizer will no longer be adequate.



Adjusting the throttle cable *

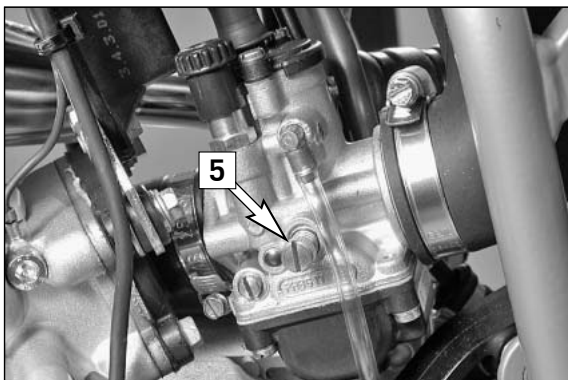
There must always be a 3 to 5 mm (0.1 to 0.2 in) play in the throttle cable. To check this, move back the protective cover [1] on the throttle grip. You must be able to lift the outer covering of the cable 3-5 mm from the adjusting screw [2], until resistance is felt. To adjust, loosen the counter nut [3] and turn the adjusting screw accordingly. Finally tighten counter nut and slide the protective cover back on.



Adjusting the idle speed Dell'Orto PHVA 14 DS (50 SX Junior) *

The idle speed can be adjusted with screw [4].

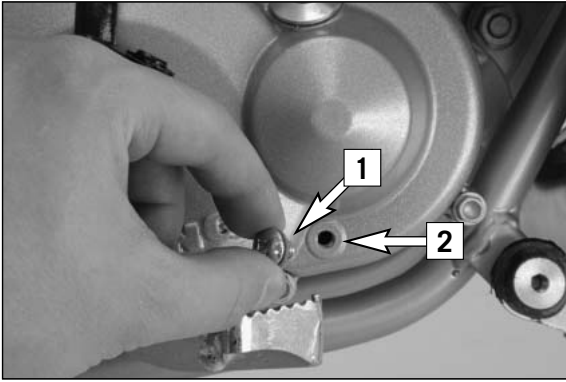
The idle speed is increased by turning clockwise.
The idle speed is reduced by turning counter-clockwise.



Adjusting the idle speed Dell'Orto PHBG 19 BS (50 SX) *

The idle speed can be adjusted with screw [5].

The idle speed is increased by turning clockwise.
The idle speed is reduced by turning counter-clockwise.

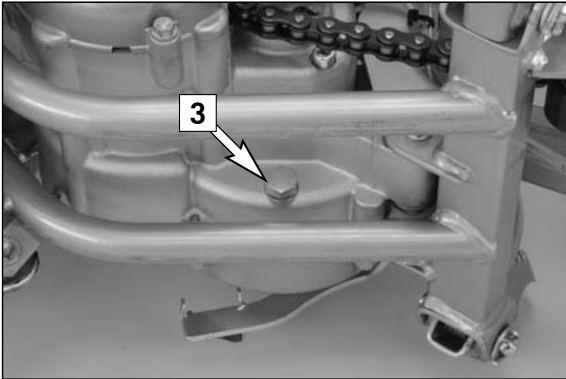


Checking the gear oil level

To check the gear oil level, first remove the plug [1]. With the motorcycle parked in an upright position, a small quantity of oil should flow out of the indicator opening [2]. If oil must be added, tilt the motorcycle and pour automatic gear oil (Motorex ATF Super) into the bore.

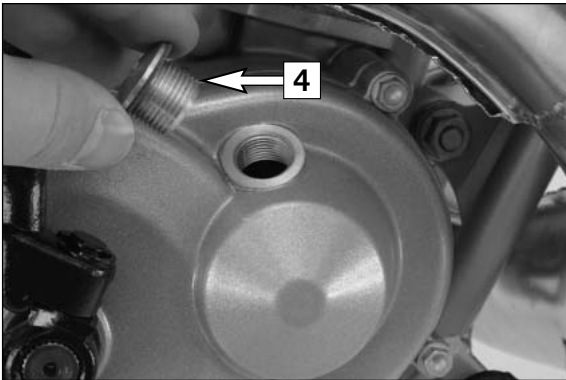
! CAUTION

Less oil or a poor oil quality lead to premature transmission wear. Therefore, only use branded products (Motorex ATF Super).



Changing gear oil *

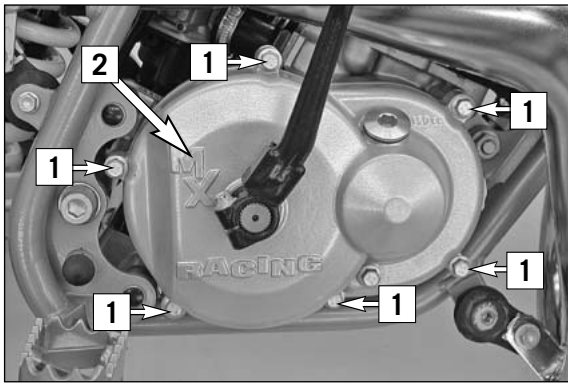
The engine must be warmed up before changing the gear oil. Park the motorcycle on a horizontal surface, remove the oil drain plug [3] and drain the used oil into an appropriate container. Clean the sealing surface, mount the oil drain plug together with the gasket and tighten to 15 Nm.



Remove stopper [4] and fill in 0.15 liters of automatic gear oil (Motorex ATF Super). Mount the stopper and check the engine for tightness.

! CAUTION

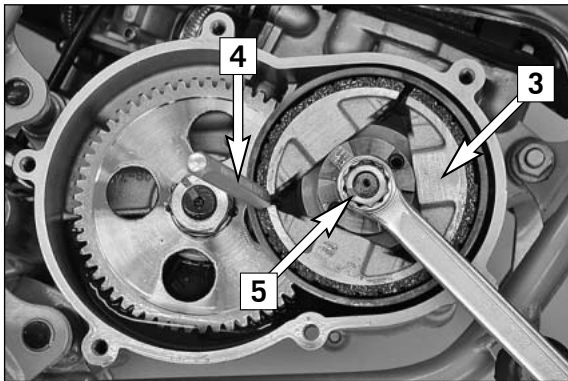
Less oil or a poor oil quality lead to premature transmission wear. Therefore, only use branded products (Motorex ATF Super).



Adjusting the centrifugal clutch *

A correctly adjusted centrifugal clutch will provide maximum engine performance and ease of driving and prevent the engine from overheating. Clutch wear can affect the clutch engagement speed.

The clutch will slip for a longer period of time at higher clutch engagement speeds, generating more frictional heat and causing the engine to overheat. If the clutch engagement speed is too low, the engine will not reach the performance range. In both cases, the engine will not seem to have enough power. Check the clutch engagement speed every 20 hours and correct if necessary or have it corrected by an authorized KTM workshop.



To tune your clutch, lay the bike on the left side. To prevent oil from leaking from the transmission vent hose, run the hose upwards and fasten. Remove the screws [1] and the clutch cover [2] and discard the gasket. Block the centrifugal clutch [3] with a suitable driver [4].

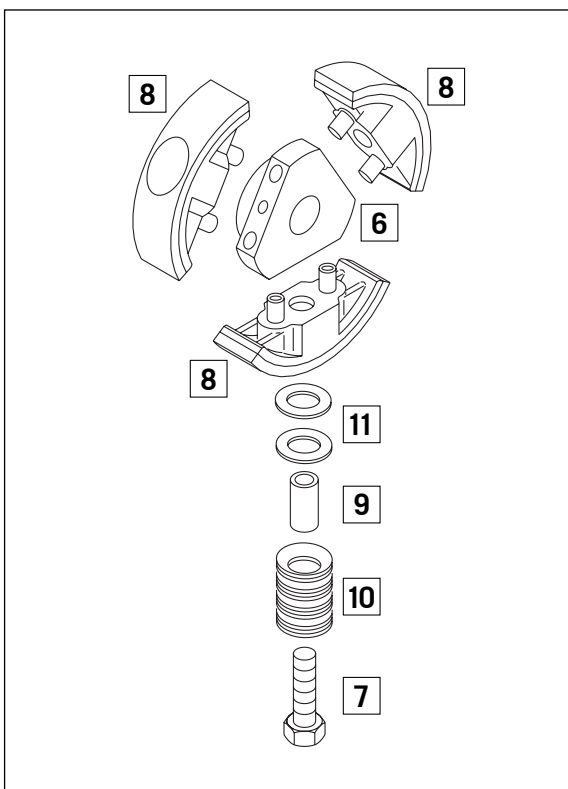
NOTE: insert the driver through both holes in the primary drive's drum and gear wheel.

Loosen the nut [5] on the clutch and pull out the driver. Remove the nut and shim from the crankshaft.



Screw the extractor (special tool item no. 590.29.021.044) onto the clutch hub [6] with the M5x50 screws, hold the extractor and remove the centrifugal clutch from the crankshaft by screwing in the extractor screw. Completely remove the centrifugal clutch, bearings and spacing washers from the crankshaft.

Loosen the HH screws [7] and remove the clutch shoes [8] from the clutch hub [6]. Remove the HH screws and bushings [9], the spring sets [10] and the disks [11] from the clutch shoes.



ADJUSTING THE CLUTCH ENGAGEMENT SPEED:

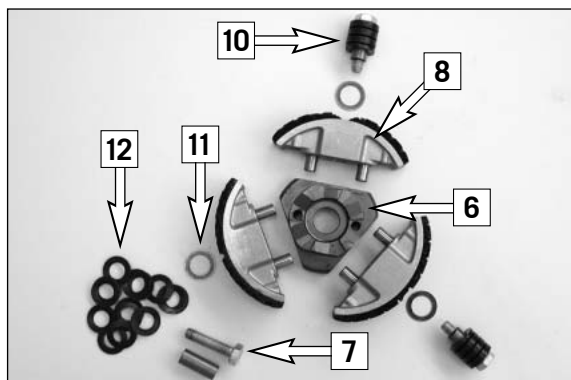
The spring sets contain 14 spring washers [12] that need to be positioned on top of each other in the order shown in the illustration [A].

Washers are located between the spring sets and the clutch shoes to pre-tension the spring sets. You can influence the clutch engagement speed by pre-tensioning the spring set. 0.5 mm more pretension will increase the clutch engagement speed by approx. 500 rpm.

The clutch engagement speed is the speed at which the clutch begins to engage and the motorcycle starts to drive off. The clutch engagement speed is 8500-9000 rpm for the 50 LC engine.

NOTE: a tachometer (special tool item no. 451.29.075.000) to test the clutch engagement speed is available from your KTM dealer.

Make sure the spring sets are not soiled during service or repair work to the clutch since this can cause them to malfunction.



CORRECTING CLUTCH WEAR:

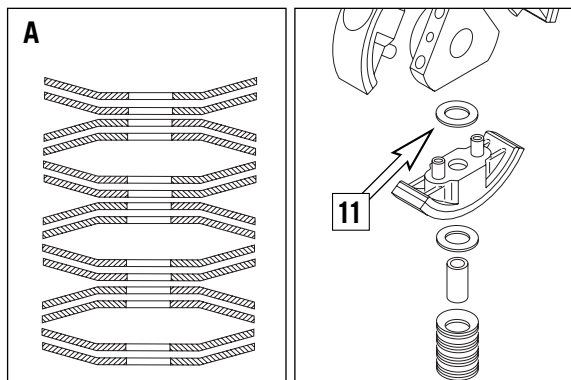
Check the clutch shoes for wear. If the surface is only slightly worn you can remount them again.

NOTE: The centrifugal clutch has an outer diameter of approx. 82.5 mm when new.

To correct slight wear to the surface, you can insert one of the pretensioning disks **[11]** from each clutch spring between the clutch hub and the clutch shoes – see illustration.

If only one disk is installed, you can go ahead and use it.

The inner diameter of the centrifugal clutch drum may not exceed 84.4 mm (new condition 84.0 mm).



Assemble in the reverse order.

Apply Loctite 243 to the HH screws **[7]** and tighten to 12 Nm.

Apply Loctite 243 to the M10x1.25 nut **[5]** on the crankshaft and tighten to 35 Nm.

Mount a new gasket and position the clutch cover **[2]**.

Screw on the clutch cover with 6 M6x25 screws **[1]** and tighten to 10 Nm.

Move the transmission vent hose back in the original position.

TROUBLE SHOOTING »

If you let the specified maintenance work on your motorcycle be carried out, disturbances can hardly be expected. Should an error occur nevertheless, we advise you to use the trouble shooting chart in order to find the cause of error. We would like to point out that many operations cannot be performed by oneself. In case of uncertainty, please contact a KTM-dealer.

TROUBLE	CAUSE	REMEDY
Engine fails to start	Operating error	Open fuel tap, replenish fuel, do not use choke
	The motorcycle was not driven for a longer period of time, leaving old fuel in the float chamber	The highly inflammable components in modern fuels volatilize if left standing for longer periods of time. If the motorcycle has not been used for over 1 week, the fuel should be drained from the float chamber. The engine will start up immediately if the float chamber is filled with fresh, ignitable fuel
	Fuel supply interrupted	Close fuel tap, loosen fuel hose at carburettor, lead into a basin and open fuel tap, <ul style="list-style-type: none"> – if fuel leaks out, clean carburettor – if no fuel leaks out, check tank ventilation, i.e. clean fuel tap
	Electrode distance too large	Reduce electrode distance (0.60 mm)
	Plug fouled by oil, wet or bridged	Clean spark plug or renew
	Ignition wire or spark plug connector damaged	Dismount spark plug, connect ignition cable, hold to ground (blank place on engine) and actuate kickstarter, a strong spark must be produced at the spark plug <ul style="list-style-type: none"> – If no spark is produced, loosen spark plug cap from ignition cable, hold about 5 mm from ground and actuate kickstarter – If a spark now occurs, replace spark plug cap – If no spark is produced, control ignition system
	Kill button wire or short-circuit switch faulty	Disconnect black coloured cable from short circuit button at ignition coil and check ignition spark. If the spark is O.K. repair defective part of cable or ignition switch
	Loose ignition cable connectors	Inspect cable connectors
	Spark too weak	Examine ignition system
Engine without idle running	Idle adjusting screw out of adjustment	Readjust idle running or replace idle adjusting screw
	Ignition system damaged	Examine ignition system
	Wear	Overhaul engine
Less power of engine	Air filter obstructed	Clean or renew airfilter
	Fuel supply partly interrupted or blocked	Blow through fuel pipe and clean carburetor
	Loss of compression due to loose spark plug	Tighten spark plug
	Exhaust system damaged	Check exhaust system for damage
	Engine has not enough preignition	Check and adjust ignition
	Reed paddles tensionless or damaged, surface of reed valve housing damaged	Replace reed paddles or reed valve housing
	Wear	Overhaul engine

TROUBLE SHOOTING »

TROUBLE	CAUSE	REMEDY
Engine stalling or running with four stroke cycle	Carburetor overflows if level adjust too high, float needle seating is dirty or enlarged	Clean carburetor, if necessary replace float needle and adjust level
	Loose carburetor jets	Tighten jets
High rpm misfiring	Incorrect heat range spark plug or low quality spark plug	Refer to technical data section
	Loose, corroded or non conductive ignition socket connector	Check and seal with silicon
Engine splutters into the carburetor	Lack of fuel	Clean fuel pipes, examine tank aeration and clean
	Spark plug with incorrect heat value (Ignition by incandescence)	Fit correct spark plug
	Engine takes air out of control	Check intake flange and carburettor if firmly setted
Engine overheating	Insufficient liquid in cooling system	Top up coolant and bleed cooling system check cooling system for leaks
	Radiator fins clogged	Clean radiator fins with water jet
	Frothing in cooling system	Renew coolant using branded anti-freeze/anti-corrosive (Motorex Anti-Freeze)
	The motorcycle is being driven too slowly, the clutch keeps slipping, causing heat to develop	Drive the motorcycle faster or reduce the preload on the clutch springs
	Pinched or kinked water hoses	Replace with correct routed hoses
	Incorrect ignition timing because of loose stator screws	Readjust to correct ignition timing specifications, secure screws with Loctite 243
	Incorrect compression ratio	Measure and adjust compression ratio
Emission of white smoke (steam)	Cylinder head or O-ring of cylinder head gasket leaks	Check cylinder head, replace O-ring
Excessive oil escapes from transmission breather tube	Excessive oil quantity in transmission	Correct transmission oil level

CLEANING »

Clean your motorcycle regularly in order to keep its painted finish looking shiny and new. The best manner would be to use warm water that has been mixed with a commercially available washing detergent and a sponge. The hard dirt can be removed before with the help of a soft water jet.

! CAUTION

Never clean your motorcycle with a high-pressured cleaner or a high-pressured water jet, otherwise the water might run into the electrical components, connectors, sheathed cables, bearings, carburetor etc. and cause malfunctions, i.e., lead to the premature destruction of these parts.

- You should use commercially available detergents to clean the motorcycle. Heavily soiled parts should also be cleaned with the help of a paint brush.
- Before cleaning with water, plug the exhaust pipe to prevent water ingress.
- After the motorcycle has been rinsed with a soft water jet, it should be dried by air pressure and a cloth. Then take a short drive until the engine has reached its operating temperature, and also operate the brakes. The heat also causes the water at the inaccessible parts of the engine and the brakes to evaporate.
- Slide back the protective covers on the handlebar-mounted instruments so that any water that may have seeped into this part of the motorcycle is allowed to evaporate.
- After the motorcycle has cooled down, oil and grease all the gliding bearing parts. Also treat the chain with a chain spray.
- To prevent failures in the electric system, you should treat the short circuit button with a contact spray.

STORAGE »

If you want to put your motorcycle away for longer periods of time, please observe the following instructions:

- Clean motorcycle thoroughly (see chapter: CLEANING)
- Change engine oil (old engine oil contains aggressive contaminations).
- Check antifreeze and amount of cooling liquid.
- the engine warm up again, close fuel tap and wait until the engine dies off by itself. In this way, the carburetor jets are prevented from becoming resin-clogged by the old fuel.
- Remove spark plug and fill in approx. 5 cc of engine oil into the cylinder through the opening. Actuate kickstarter 10 times in order to distribute the oil onto the cylinder walls and mount the spark plug.
- Let fuel flow out of tank into an appropriate basin.
- Correct tire pressure.
- Lubricate bearing points of the control levers, footrests, etc. as well as the chain.
- The storage place should be dry and not be subjected to overly great temperature fluctuations.
- Cover the motorcycle with an air permeable tarpaulin or blanket. Do not use airtight materials, as possible humidity might not be able to escape and thereby cause corrosion.

! CAUTION

It would be very bad to let the engine run for a short time during the storage period. The engine would not get warmed up enough and the thus developed steam would condense during the combustion process and cause the exhaust to rust.

USE AFTER PERIOD OF STORAGE

- Fill up tank with fresh fuel.
- Check motorcycle as before each start (see driving instructions).
- Take a short, careful test ride first.

NOTE: Before you put your motorcycle away for the winter, you should check all parts for their function and wear. Should any service jobs, repairs, or any refitting be necessary, you should have them carried out during the off-season (lower workload at mechanics' shops). This way, you can avoid the long waiting times at your shop at the beginning of the next biking season.

TECHNICAL DATA – ENGINE »

ENGINE	50 SX JUNIOR	50 SX
Design	single cylinder 2-stroke engine, with reed valve inlet	
Displacement	49.0 cc	
Bore/Stroke	39.5 / 40 mm	
Fuel	SUPER fuel, research octane no 95, mixed with 2-stroke oil	
Oil/gasoline ratio	1 : 60 when using high grade 2-stroke oil (Motorex 2T Cross Power) When in doubt, please contact your importer	
Lubrication	mixture lubrication	
Crankshaft bearing	2 grooved ball bearing	
Connecting rod bearing	needle bearing	
Piston pin bearing	needle bearing	
Piston rings	1 rectangular ring	
Primary drive	straight cut spur gears, 16 : 57 Z	
Transmission oil	0.15-0,2 liter automatic gear oil Dexron II (Motorex Topspeed 4T 15W50)	
Spark plug	NGK BR 8 ECM	
Electrode gap	0.6 mm	
Carburetor	Dell'Orto PHVA 14 DS	Dell'Orto PHBG 19 BS
Air filter	wet foam type air filter insert	
Cooling liquid	0.5 litres, 50% antifreeze, 50% distilled water, at least -25 °C (-13 °F)	

BASIC CARBURETOR SETTING		
Model	50 SX Junior	50 SX
Type	Dell'Orto PHVA 14 DS	Dell'Orto PHBG 19 BS
Main jet	80	85
Needle jet	211 FA	260 AU
Idling jet	45	48
Jet needle	A10	W9
Needle position from top	3.	3.
Air/Mixture reg. screw open	3.5	3.0
Slide	40	60
Starting jet	60	60

TIGHTENING TORQUES - ENGINE		
Primary gear nut	M14x1,25	40 Nm
Hexagon nut ignition rotor	M10x1,25	20 Nm
Nut of clutch hub	M10x1,25	Loctite 243 + 35 Nm
Cylinder head screws	M7	15 Nm
Cylinder base nuts	M8	18 Nm
Allan head screw-Stator	M5x25	Loctite 243 + 8 Nm
Oil plug	M16	5 Nm
Oil drain plug	M10	15 Nm
Other engine screws	M5	7 Nm
	M6	10 Nm
	M8	30 Nm

TECHNICAL SPECIFICATIONS - CHASSIS »

CHASSIS	50 SX JUNIOR	50 SX
Frame	single downtube, split-cradle	
Fork	Marzocchi Ø = 32 mm	
Wheel travel front/rear	140/205 mm (5.5/8 in)	185/185 mm (7.3/7.3 in)
Rear suspension	Central shock absorber WP	
Front brake	Disk brake Ø 160 mm (6.4 in)	
Rear brake	Drum brake Ø 90 mm (3.5 in)	Disk brake Ø 140 mm (5.5 in)
Tires front	Pirelli 2.50-10 33J Scorpion	Pirelli 60/100-12 36NHS Scorpion
Tires rear	Pirelli 2.75-10 37J Scorpion	Pirelli 2.75-10 37J Scorpion
Tire pressure	front/rear: 1.0 bar	
Fuel tank capacity	1.8 Liters	
Final drive ratio	11 : 48	10 : 44
Chain	1/2x3/16" 96 rolls	1/2x3/16" 102 rolls
Steering angle	66°	
Wheel base	910 mm (35.8 in)	1030 mm (40 in)
Seat height, unloaded	585 mm/610 mm (23/24 in)	650/675 mm (25.6/26.6 in)
Ground clearance	220 mm (8.6 in)	255 mm (10 in)
Rider's body height	max. 130 cm (51 in)	
Rider's body weight	max. 35 kg (78 lbs)	
Recommended age of rider	4-7 years	6-10 years
Engine	50 LC	

TIGHTENING TORQUES		
Hexagon nuts front/rear axle	M12x1	40 Nm
Hexagon nut swing arm bolt	M10	45 Nm
Clamping screw upper fork bridge	M8	25 Nm
Clamping screw lower fork bridge	M6	10 Nm
Screws handlebar clamp	M8	20 Nm
Shock absorber top/bottom	M10	45 Nm
Allan screw – Handlebar support	M10	Loctite 243 + 40 Nm
Front brake caliper	M8	Loctite 243 + 20 Nm
Front/rear brake disk	M6	Loctite 243 + 15 Nm
Spoke nipple	M4	3 Nm
Other chassis screws	M5	6 Nm
	M6	10 Nm
	M8	25 Nm
	M10	45 Nm

STANDARD-ADJUSTMENT – FORK	
Spring	2,0 N/mm
Preload	10 mm (0.4 in)
Fork oil	SAE 7,5
Air chamber length	110 mm (4.3 in)

STANDARD ADJUSTMENT - SHOCK ABSORBER		
	50 SX Junior WP 03189D01	50 SX WP 03189D02
Rebound adjuster	12	10
Spring	75 N/mm	35 N/mm
Spring preload	5 mm (0.2 in)	3 mm (0.12 in)

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Shock absorber

3612 BAEM

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Introduction

General notice

Pay attention to the following notes, when you are working with WP Suspension products as described in this workshop manual.

Always use clean and professional tools.
Regular you need next to the general equipment, the special tools of WP Suspension.
These tools with a unique "T" number (available by WP Suspension) protect you from damaging the parts.

Always use aluminium protector-plates, when clamping our products or parts in the vice.

Replace always damaged or worn parts.

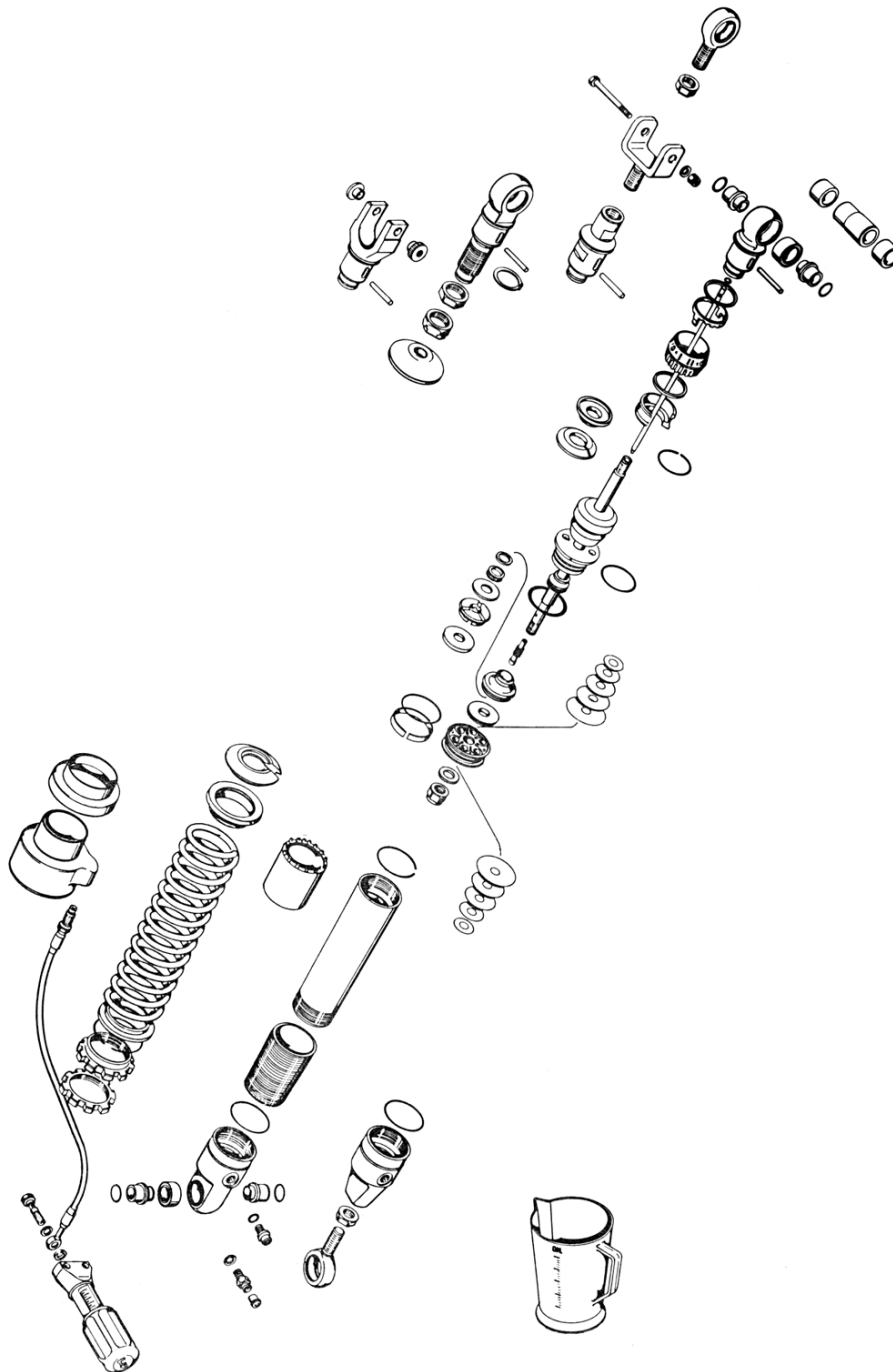
Clean all parts before assembling.

Caution:

Many times it is necessary to assemble parts with T131, T132 and T163.

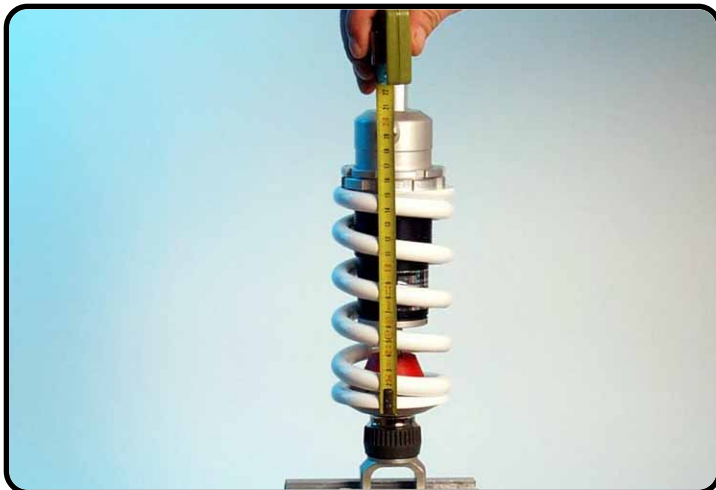
These parts must be dry for at least four hours!!!

Exploded view



Adjustment

Measure the length (preload) of the spring.



Take note of position rebound.

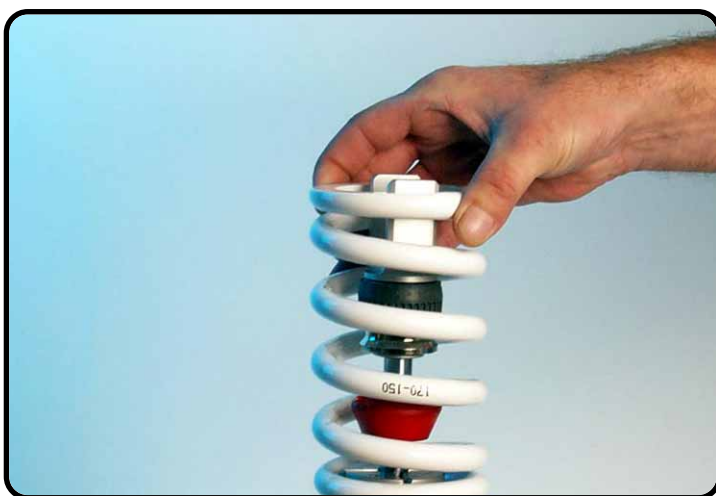


Disassembly piston-rod

Disassemble the spring with T101S and remove the open spring retainer.

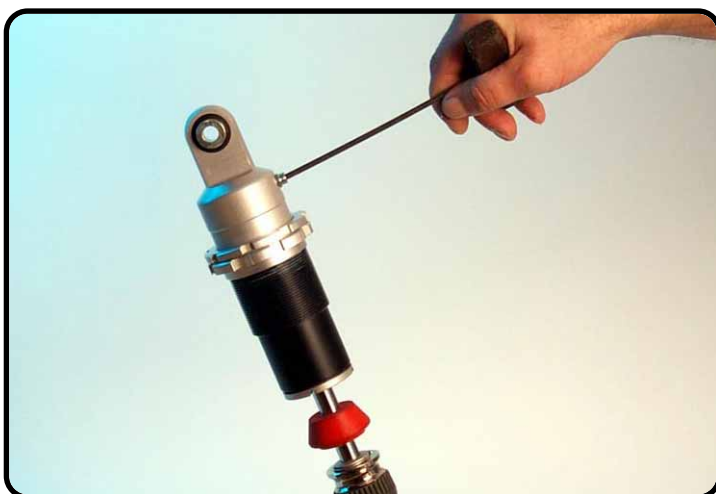


Remove the spring.





Adjust the rebound to position 1.



Clamp the shock absorber in the vice and unscrew the nitrogen plug several turns, release the pressure slowly, leave the plug in the bottom.



Unscrew with T125S the screw cap.



Remove the O-ring out of the tube.



Pull the piston-rod "complete" out of the tube.



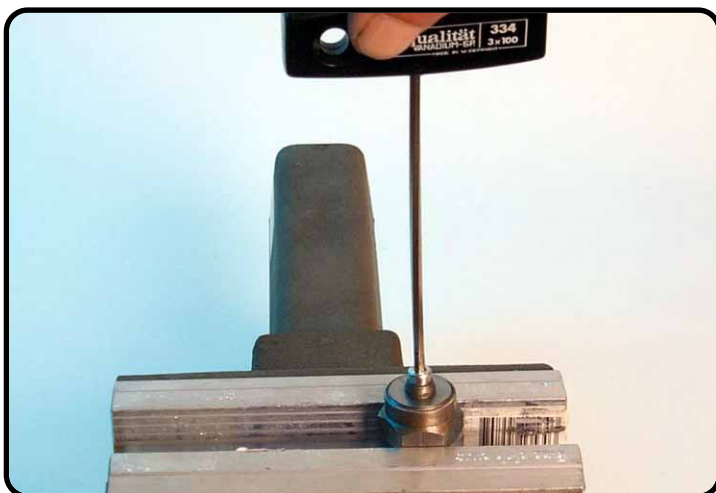
Unscrew the piston-rod nut. (size 22)



Place a screwdriver on top of the piston-rod and remove the entire assembly.



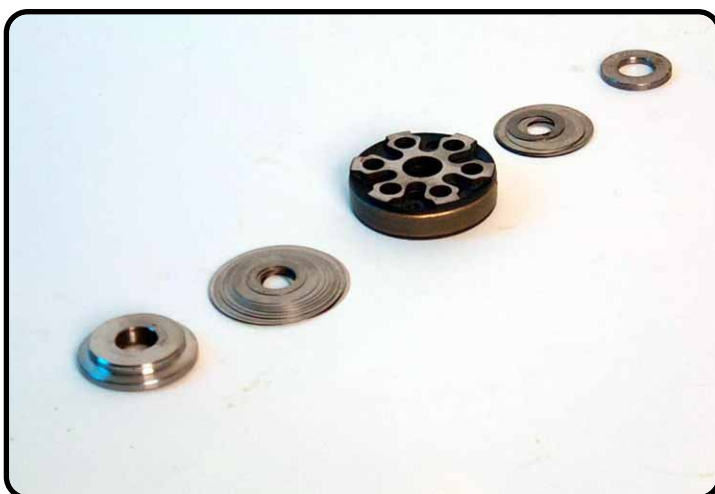
Piston-rod nut BA.



Disassemble the piston-rod nut.



- Piston-rod nut
- shims
- bush
- bleed bolt (Allen screw)



- rebound bush plane
- compression shims
- piston
- rebound shims
- washer



Remove (should this be the case) the spacers.



Remove the adaptor DU-bush.



Remove the circlip and O-ring.



Remove dirt scraper and screw cap.



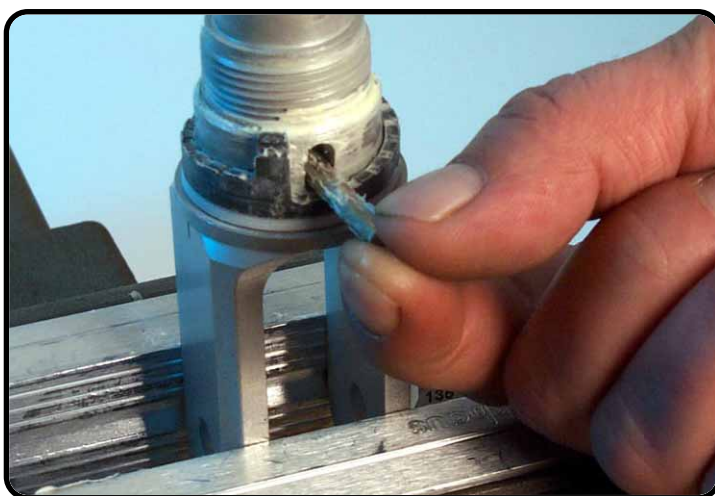
Remove the bump rubber.



Remove the circlip and ring.
(On picture with nut)



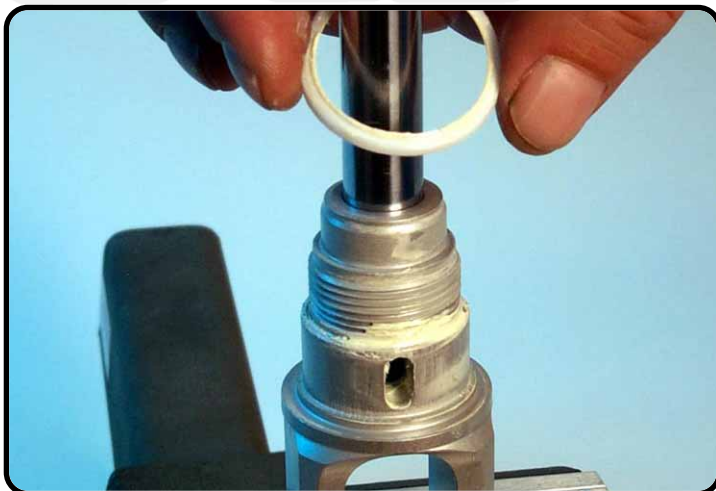
Take off adjusting knob rebound.



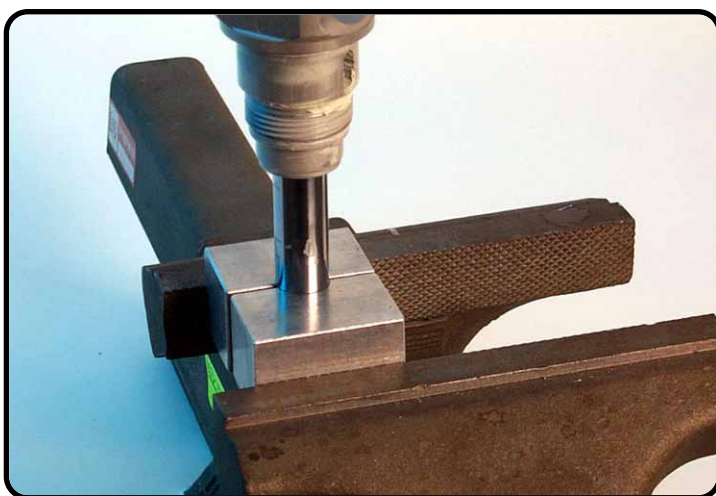
Remove the pin. (D4)



Remove the position ring.



Remove the seal.

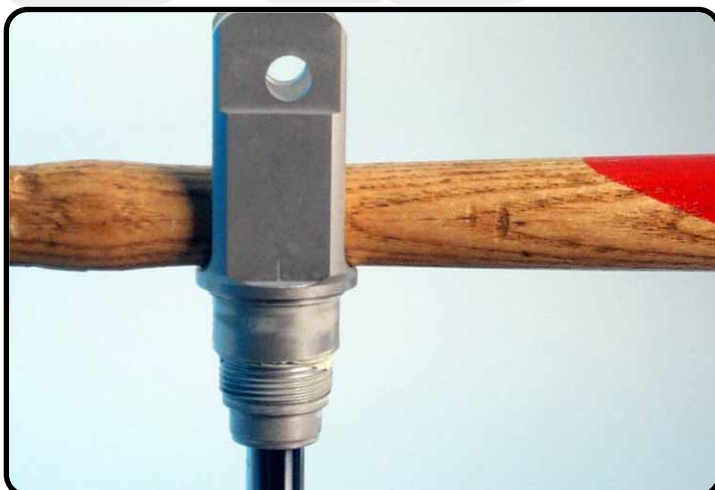


Clamp the piston rod in the vice with T104S.

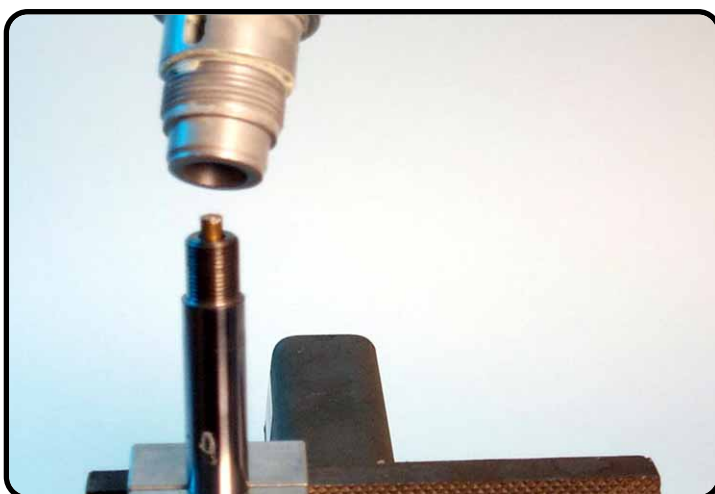


Heat mounting eye.

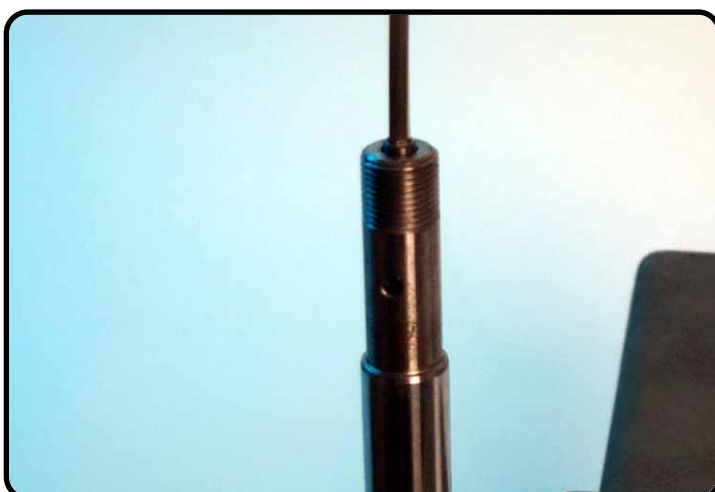
On picturer mounting fork, but the handlings are exactly the same.



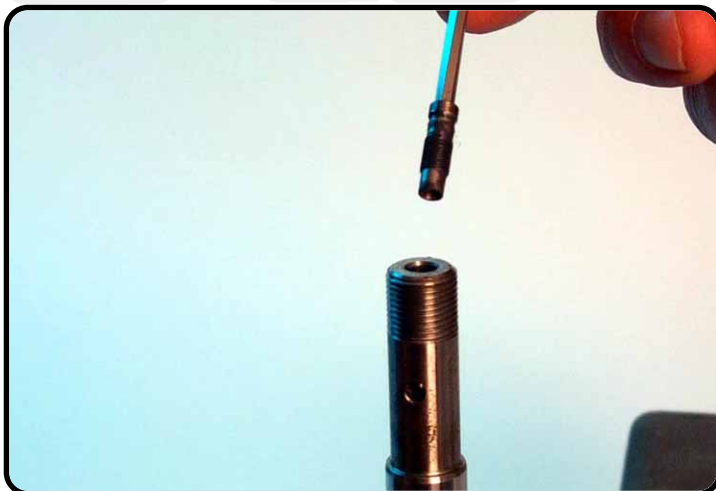
Unscrew the mounting eye.



Remove the mounting eye.



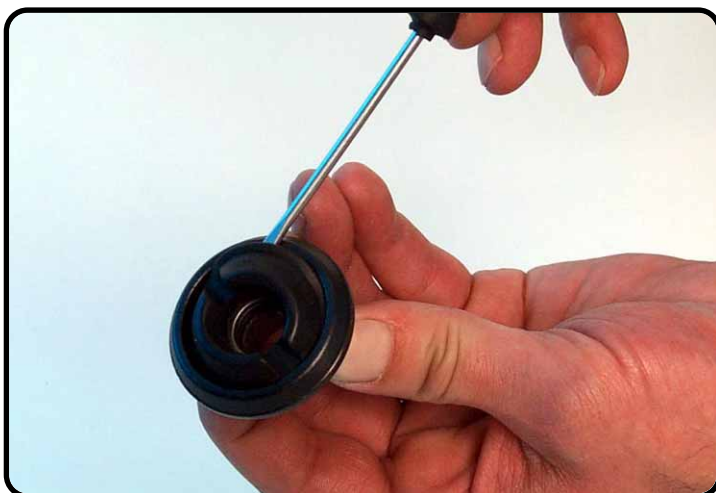
Unscrew the seat with Allenkey size 3.



Remove the seat.



Remove the rebound adjusting needle out of the piston-rod.



Disassembly adaptor DU-bush

Prise rebound rubber out the adaptor DU-bush.



Remove the washer.



Remove the Quad ring and back-up ring.



Disassemble the DU-bush with T105S and part of T1150.

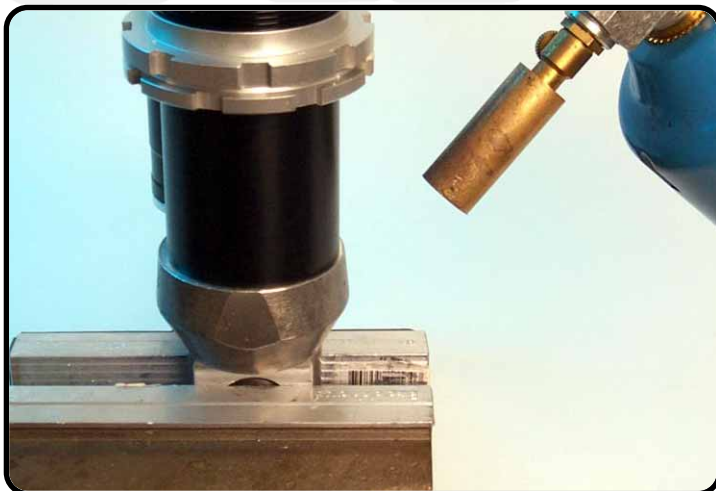


Press the DU-bush out of the adaptor.



- rebound rubber
- washer
- quad ring
- back-up ring
- DU-bush
- adaptor

Disassembly tube side



Heat bottom.



Unscrew the tube with T146 and T315.



Clamp tube with T146 and T315 and heat threaded bush.



Unscrew threaded bush with T304.

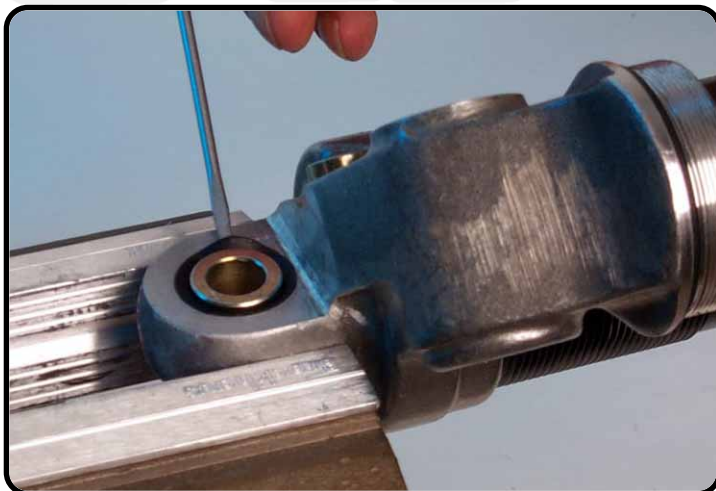


Threaded bush with the spring retainers.



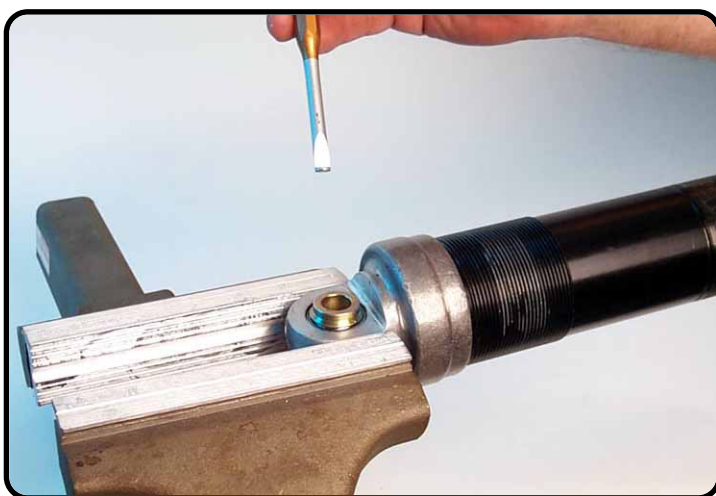
Disassemble the spring retainers with T304.

Disassembly heim-joint KGW



Remove the seals on both sides.

On pictures bottom VP, but the handlings are exactly the same.



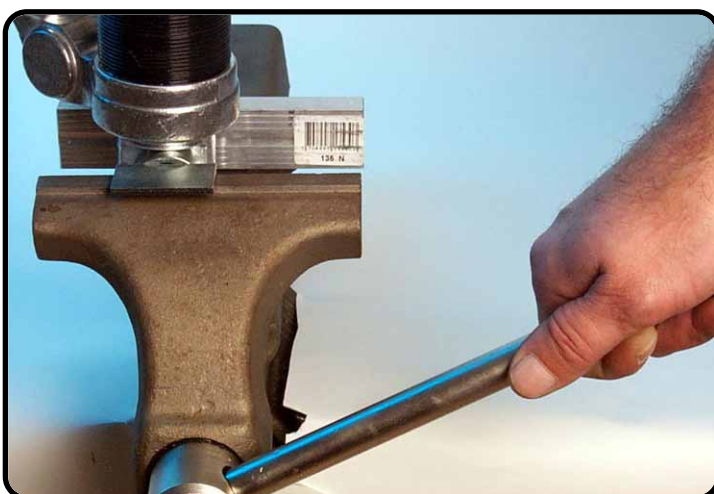
Tap the adaptor bushes out the heim-joint KGW with T120.



Tapping the adaptor bush out.



Disassemble heim-joint KGW with T130S...



...and with support of the vice.



- seal
- adaptor bush
- heim-joint KGW
- bottom
- adaptor bush
- seal

Assembling heim-joint KGW



Drip on the innerside of bottom-eye T163 and mount heim-joint KGW with T129.



Press the heim-joint into the bottom with the vice.



Assemble with T129 adaptor bush on one side...

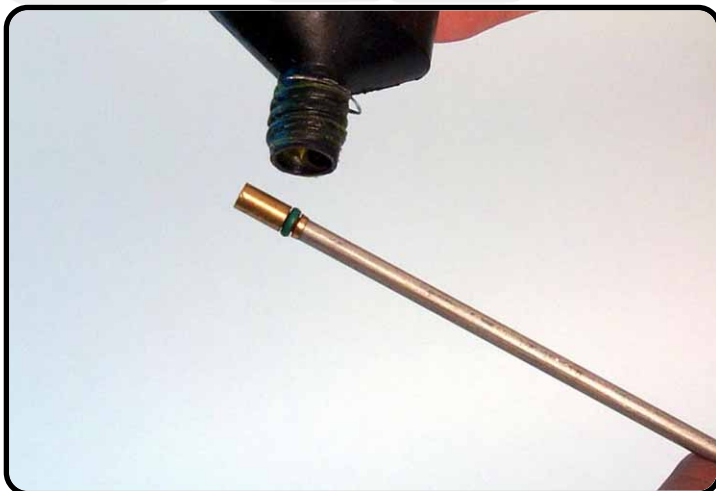


...and without tool the other side.



Assemble the seals in the groove of bottom-eye.

Assembling piston-rod



Grease O-ring adjusting needle rebound with T158.



Assembling the adjusting needle into the piston-rod.



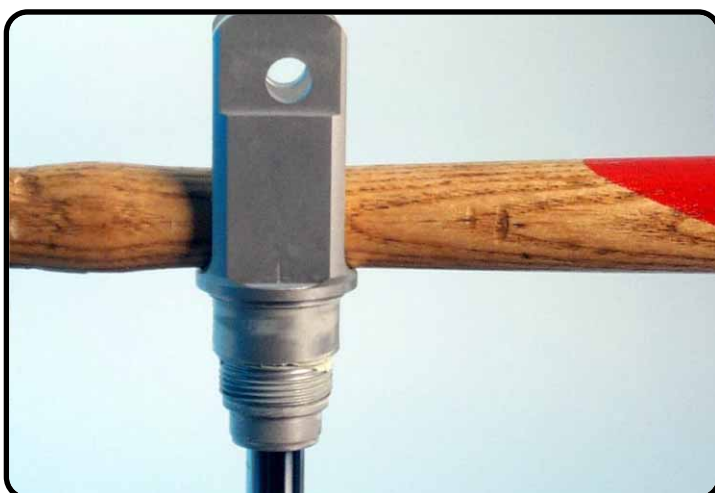
Drip on the thread of the mounting eye T132.



Drip on thread piston-rod T132.



Screw the mounting eye on the piston-rod.



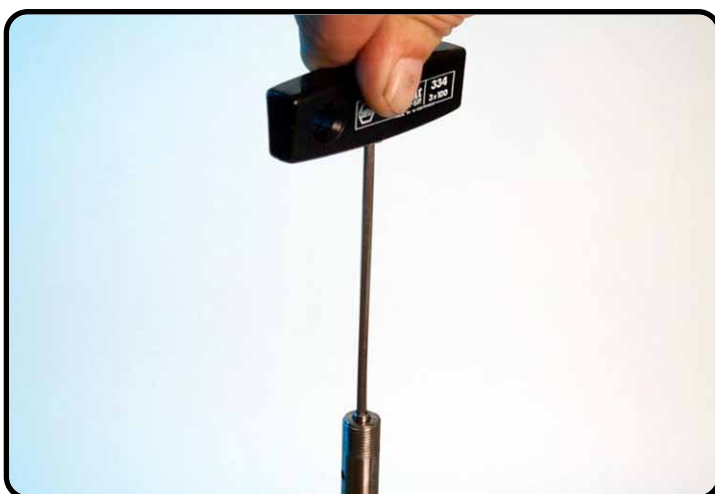
Tighten the mounting eye.



Replace the seal and position ring.



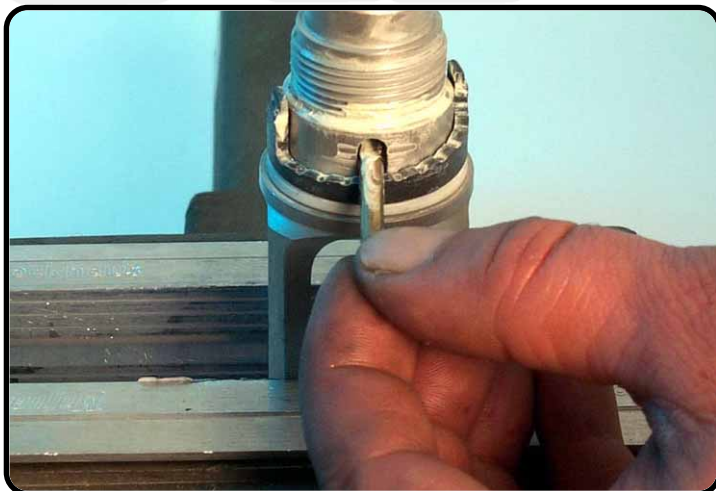
Place T107S through mounting eye under the needle and adjust position ring in the highest position.



Assemble a new seat greased with T152 on the thread.



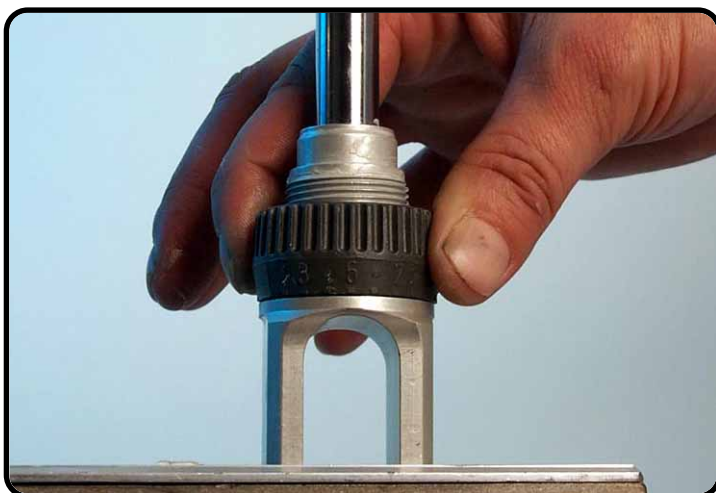
Tight seat light till T107S and turn 2 rotations back.



Grease ring and pin with T159 and assemble the pin.



Grease the innerside of the adjusting knob with T159 and replace seal.



Assemble the adjusting knob and turn the knob to position 1.



Assemble the ring and springring on the mounting eye.



Push the needle downwards on the pin with Allenkey size 2.



Place T313 on top of the piston-rod.



Assemble the bump rubber.



Assemble the screw-cap.



Grease innerside dirt scraper with T625 and assemble.



Replace the O-ring.



Assembling adaptor DU-bush

Press DU-bush into the adaptor with T150S.



Press the DU-bush into adaptor with support of the vice.



Calibrate the DU-bush with T149.



Drive calibration mandrel (T149) through the DU-bush.



Assemble the back-up ring.



Assemble the quad ring.



Assemble the washer.



After assembly the rebound rubber, check if the rubber can be turned in the holder.



Assemble the DU-bush adaptor.



Should it be the case to assemble the spacers, then place them with the flat side on top of the rebound rubber.



Replace the entire damping package.



Assemble the piston-rod nut...



...and tighten the nut to a torque of 30Nm.

Assembling tube side

Assemble both spring retainers on the threaded bush.

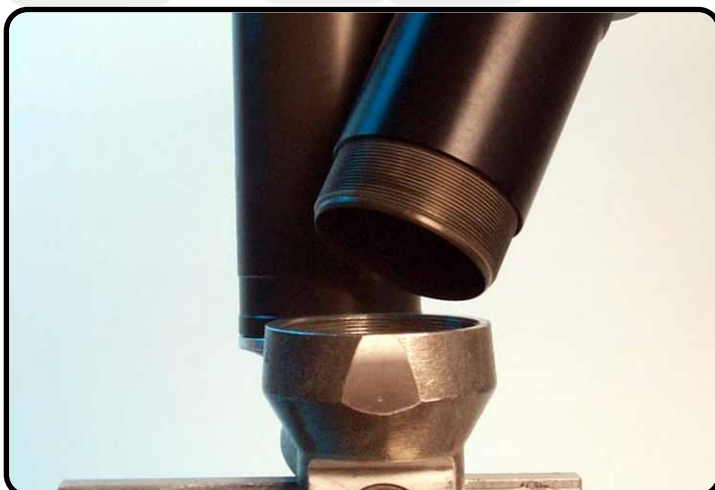


Wet T132 on thread tube and bottom.



Assemble threaded bush on the tube and screw the bush till the end of the thread.





Assemble the tube.



Tighten the tube with T146 and T316.



Screw the threaded bush against the bottom.

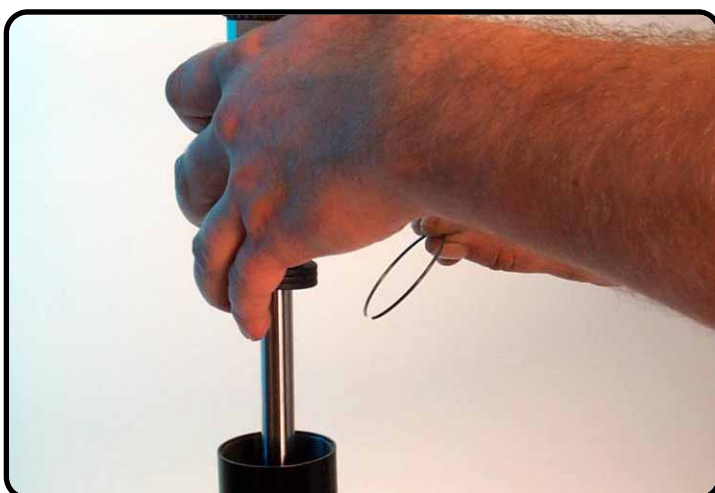


Screw down threaded bush with T304



Note: before filling tight the nitrogen-plug.

Fill the tube with oil till 65mm from the edge of the tube.



Slide piston-rod "complete" into the tube and assemble the springing above the piston in the groove with support of....



...T317.

Pull light the piston against the springring and hold this till assembling the screw cap.



(Assemble the spacers)



Assemble the adaptor DU-bush.



Remove (if necessary) the oil above the adaptor.



Slide the O-ring against the adaptor.



Slide the dirt scraper against the adaptor.

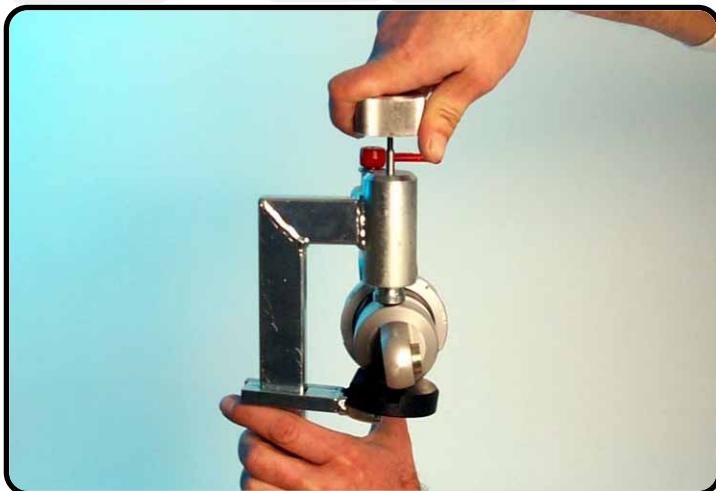


Screw the screw cap into the tube.



Tighten the screwcap with T125S.

On pressure with nitrogen

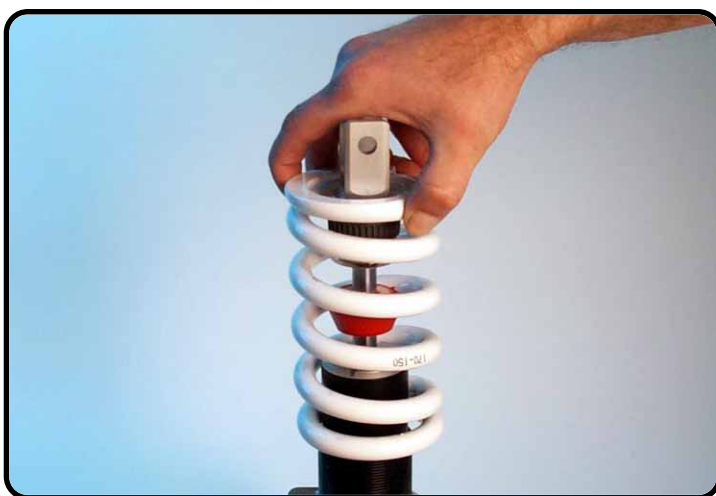


Place the shock absorber with support of T169 and T170S and unscrew the plug several turns and fill the damper with nitrogen (± 25 sec.) and tighten the nitrogen plug under pressure.

Mounting spring



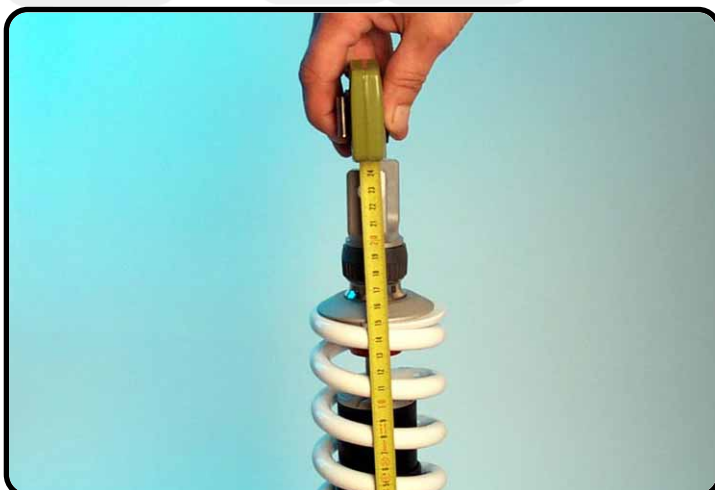
Turn mounting eye parallel with the bottom eye.



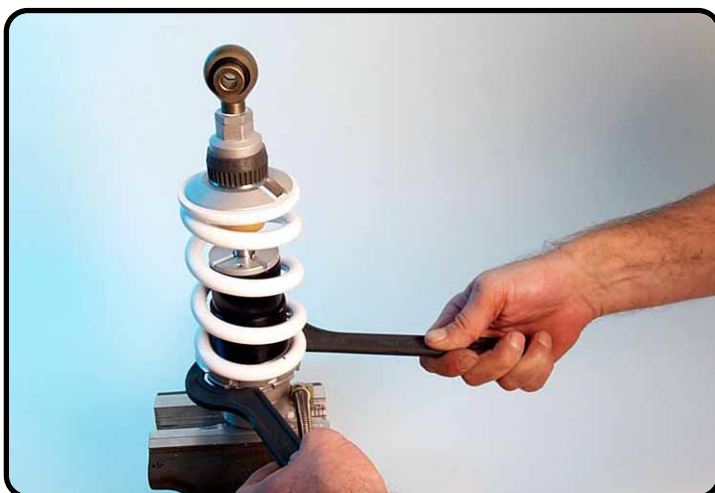
Assemble the spring.



Assemble the open spring retainer with T101S.
Closed side of the retainer on the end of the coil.



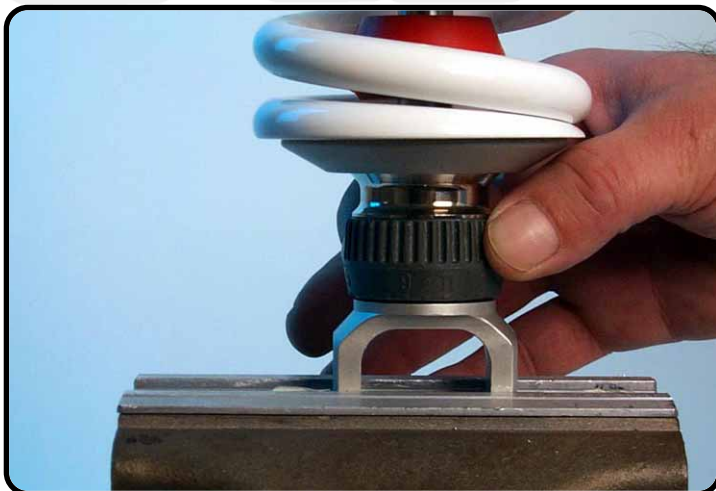
Adjust the spring preload.



Tighten the spring retainers with T304.

Adjusting

Position rebound!



WP SHOCK ABSORBER 3614 BAEM 50 SX/50 SX JUNIOR

REPARATURANLEITUNG

MANUALE DI RIPARAZIONE

MANUEL DE RÉPARATION

MANUAL DE REPARACIÓN



ART.NR.: 3.211.201-E

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2 GENERAL INFORMATION

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4 DISASSEMBLING AND ASSEMBLING THE SHOCK ABSORBER

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INTRODUCTION

This repair manual offers extensive repair-instructions and is an up-to-date version that describes the latest models of the series. However, the right to modifications in the interest of technical improvement is reserved without updating the current issue of this manual.

A description of general working modes common in work shops has not been included. Safety rules common in the work shop have also not been listed. We take it for granted that the repairs are made by qualified professionally trained mechanics.

Read through the repair manual before beginning with the repair work.

⚠	WARNING	⚠
STRICT COMPLIANCE	WITH THESE INSTRUCTIONS	IS
ESSENTIAL TO AVOID DANGER TO LIFE AND LIMB.		

!	CAUTION	!
NON-COMPLIANCE WITH THESE INSTRUCTIONS CAN LEAD TO		
DAMAGE OF MOTORCYCLE COMPONENTS OR RENDER MOTORCYCLES		
UNFIT FOR TRAFFIC !		

„NOTE” POINTS OUT USEFUL TIPS.

Use only **ORIGINAL KTM/WP SPARE PARTS** when replacing parts.

The KTM high performance shock absorber is only able to meet user expectations if the maintenance work is performed regularly and professionally.



REG.NO. 12 100 6061

In accordance with the international quality management ISO 9001 standard, KTM uses quality assurance processes that lead to the highest possible product quality.

KTM Sportmotorcycle AG reserves the right to modify any equipment, technical specifications, colors, materials, services offered and rendered, and the like so as to adapt them to local conditions without previous announcement and without giving reasons, or to cancel any of the above items without substituting them with others. It shall be acceptable to stop manufacturing a certain model without previous announcement. In the event of such modifications, please ask your local KTM dealer for information.

KTM Sportmotorcycle AG
5230 Mattighofen, Austria

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REPLY FAX FOR REPAIR MANUALS

We have made every effort to make our repair manuals as accurate as possible but it is always possible for a mistake or two to creep in.

To keep improving the quality of our repair manuals, we request mechanics and shop foremen to assist us as follows:

If you find any errors or inaccuracies in one of our repair manual – whether these are technical errors, incorrect or unclear repair procedures, tool problems, missing technical data or torques, inaccurate or incorrect translations or wording, etc. – please enter the error(s) in the table below and fax the completed form to us at 0043/7742/6000/5349.

NOTE to table:

- Enter the complete item no. for the repair manual in column 1 (e.g.: **3.211.201-E**).
You will find the number on the cover page or in the left margin on each right page of the manual.
- Enter the corresponding page number in the repair manual (e.g.: **2-3**) in column 2.
- Enter the current text (inaccurate or incomplete) in column 3 by quoting or describing the respective passage of the text. If your text deviates from the text contained in the repair manual, please write your text in German or English if possible.
- Enter the correct text in column 4.

Your corrections will be reviewed and incorporated in the next issue of our repair manual.

Item no. of repair manual	Page	Current text	Correct text

Additional suggestions, requests or comments on our Repair Manuals (in German or English):

Name mechanic/shop foreman

Company/work shop

SPECIAL TOOLS

1

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**T 101S**

Mounting tool for spring

**T 137S**

Squeeze bottle

**T 152**

Lubricant

**T 158**

O-ring grease

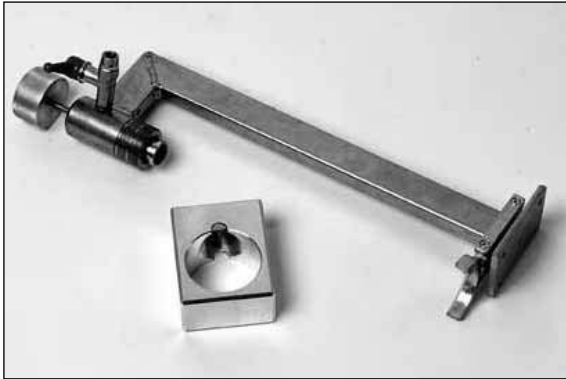
**T 159**

Waterproof grease



T 169

Holding tool for T 170S1



T 170S1

Nitrogen filling device



T 304

Hook wrench



T 313

Oil seal sleeve

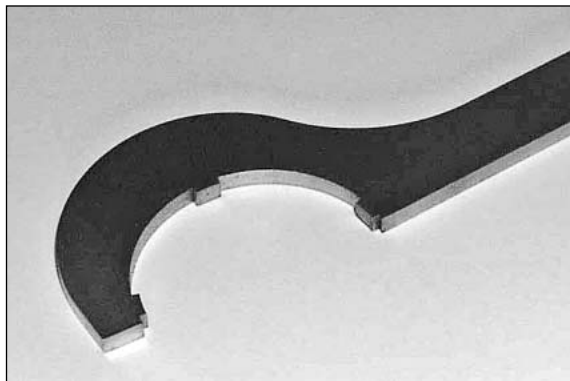


T 625

Lubricant

**T 1207S**

Dismounting/mounting tool

**T 1533**

Hook wrench

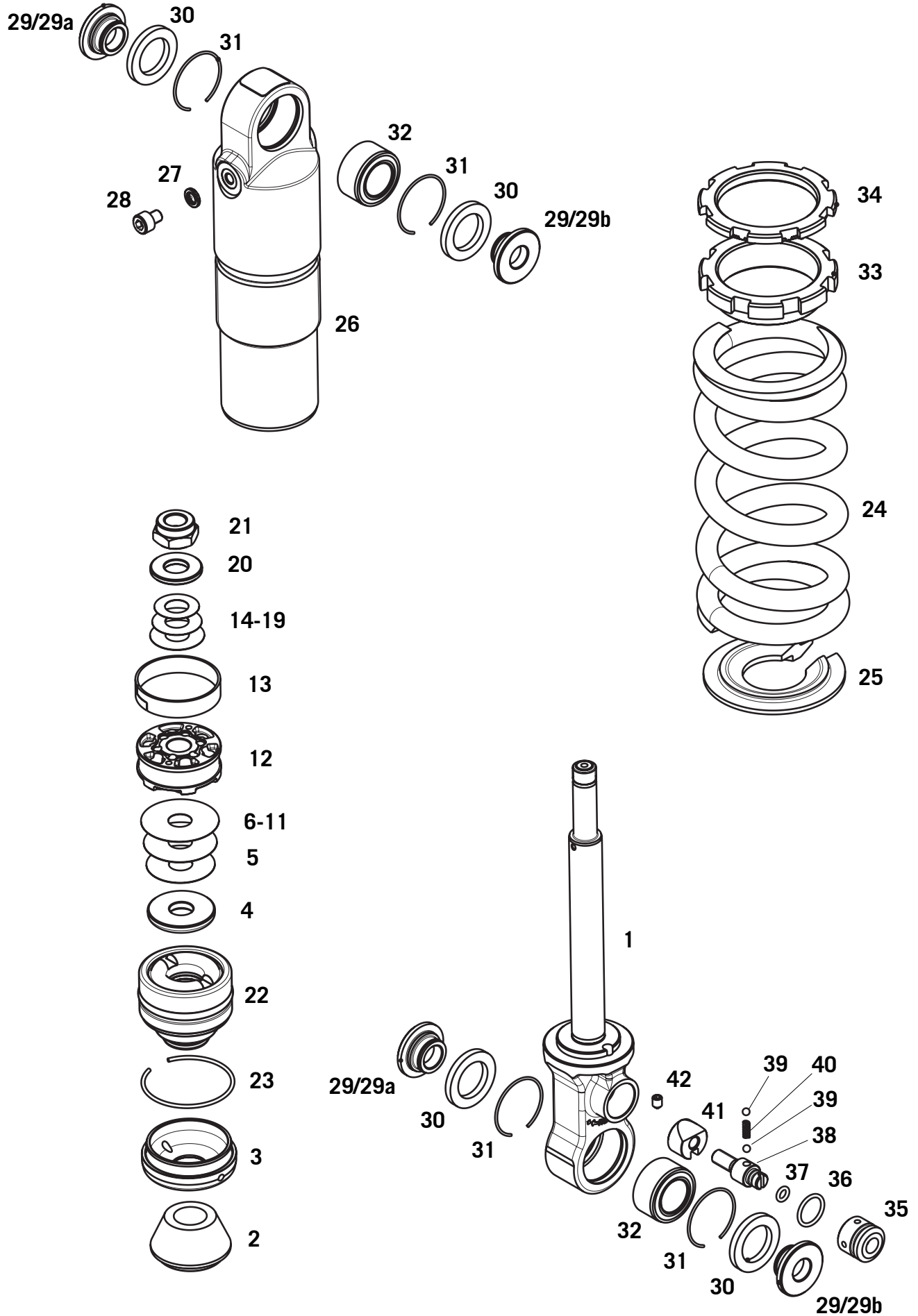
GENERAL INFORMATION

2

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Exploded view



Part list 50 SX Junior 2007 03.18.9C.01

Item	Description
1	Piston rod
2	Rubber buffer
3	Reservoir cap
4	Shim 10x28,5x4 mm
5	Support washer 10x17x0,30
6	Shim 10x23x0,25
7	Shim 10x25x0,25
8	Shim 10x27x0,25
9	Shim 10x29x0,25
10	Shim 10x31x0,25
11	Shim 10x33x0,15
12	Piston
13	Piston ring
14	Shim 10x25x0,20
15	Shim 10x23x0,15
16	Shim 10x21x0,15
17	Shim 10x19x0,15
18	Support washer 10x17x0,15
19	Support washer 10x16x0,30
20	Shim 10x22x2,5
21	Piston rod nut
22	Adaptor
23	Circlip Stainl.steel
24	Spring 75-130
25	Spring retainer
26	Tube
27	Sealing washer
28	Nitrogen plug
29a	Adaptor bush 10x20
29b	Adaptor bush 10x24
30	Oil seal
31	Lock ring
32	Heim joint
33	Adjusting ring
34	Lock ring
35	Rebound cap
36	O-ring
37	O-ring
38	Rebound adjustment
39	Ball
40	Spring
41	Rebound ramp
42	Allen screw M4x6

Adjustments

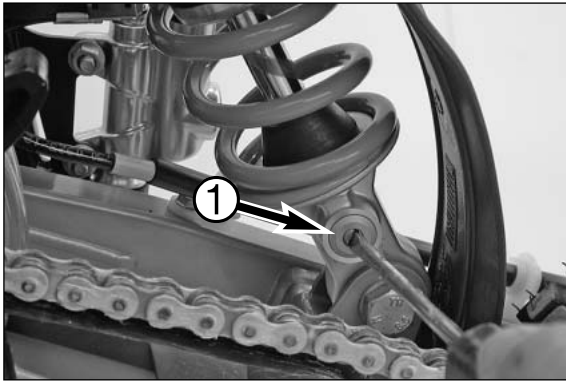
Code	03.18.9C.01
Position rebound	12
Total length (mm)	255
Gas pressure (bar)	10
Stroke (mm)	51
Preload spring (mm)	5
Oil typ / Oil viscosity	5018.0466 / SAE 2,5

Part list 50 SX 2007 03.18.9C.02

Item	Description
1	Piston rod
2	Rubber buffer
3	Reservoir cap
4	Shim 10x28,5x4 mm
5	Support washer 10x17x0,30
6	Shim 10x25x0,25
7	Shim 10x27x0,20
8	Shim 10x29x0,20
9	Shim 10x31x0,20
10	Shim 10x33x0,15
12	Piston
13	Piston ring
14	Shim 10x25x0,15
15	Shim 10x23x0,15
16	Shim 10x21x0,15
17	Support washer 10x17x0,15
18	Support washer 10x15x0,25
20	Shim 10x22x2,5
21	Piston rod nut
22	Adaptor
23	Circlip Stainl.steel
24	Spring 35-130
25	Spring retainer
26	Tube
27	Sealing washer
28	Nitrogen plug
29	Adaptor bush 10x22
30	Oil seal
31	Lock ring
32	Heim joint
33	Adjusting ring
34	Lock ring
35	Rebound cap
36	O-ring
37	O-ring
38	Rebound adjustment
39	Ball
40	Spring
41	Rebound ramp
42	Allen screw M4x6

Adjustments

Code	03.18.9C.02
Position rebound	10
Total length (mm)	275
Gas pressure (bar)	10
Stroke (mm)	65
Preload spring (mm)	3
Oil typ / Oil viscosity	5018.0466 / SAE 2,5

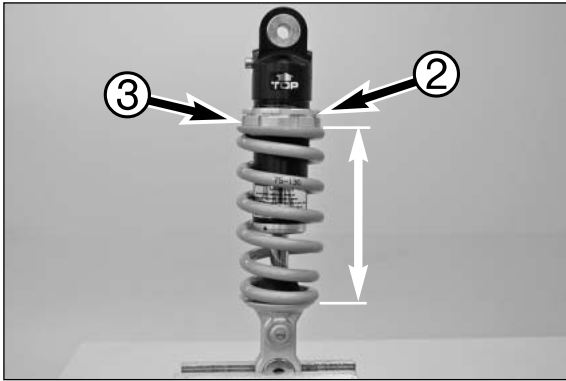


Adjusting the position of the rebound damping

By using the adjusting screw ❶, the degree of damping of the rebound can be adjusted. Turn the knob clockwise to increase damping, turn it counterclockwise to reduce damping during rebounding.

STANDARD ADJUSTMENT:

- turn the adjusting screw clockwise to the stop.
- then turn the adjusting screw counterclockwise, counting the number of clicks that corresponds to the respective type of shock absorber.



Adjusting the spring preload

NOTE: the spring preload is the difference between the unloaded and preloaded length of the spring.

- Loosen the locking ring ❷ with the hook spanner T304.
- Change the spring preload with the adjusting ring ❸ and re-tighten the locking ring.

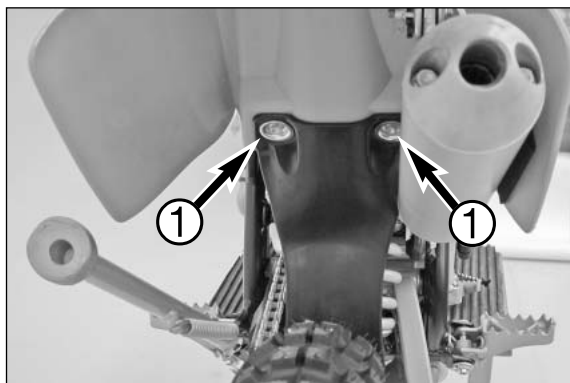
Recommended periodical service intervals

- once a year at the end of the season.

DISMOUNTING/MOUNTING THE SHOCK ABSORBER 3

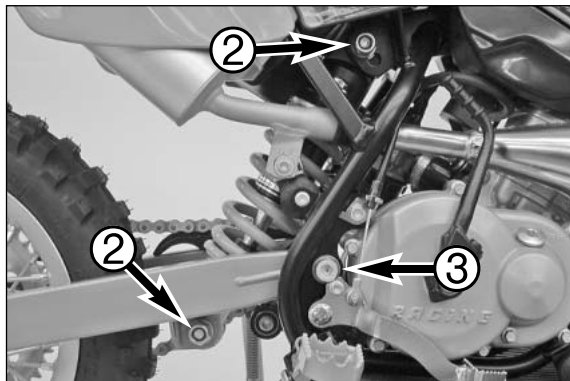
INDEX

DISMOUNTING THE SHOCK ABSORBER	3-2
MOUNTING THE SHOCK ABSORBER	3-2



Dismounting the shock absorber

- Jack up the motorcycle on a suitable stand.
- Remove the splash protector **1**.

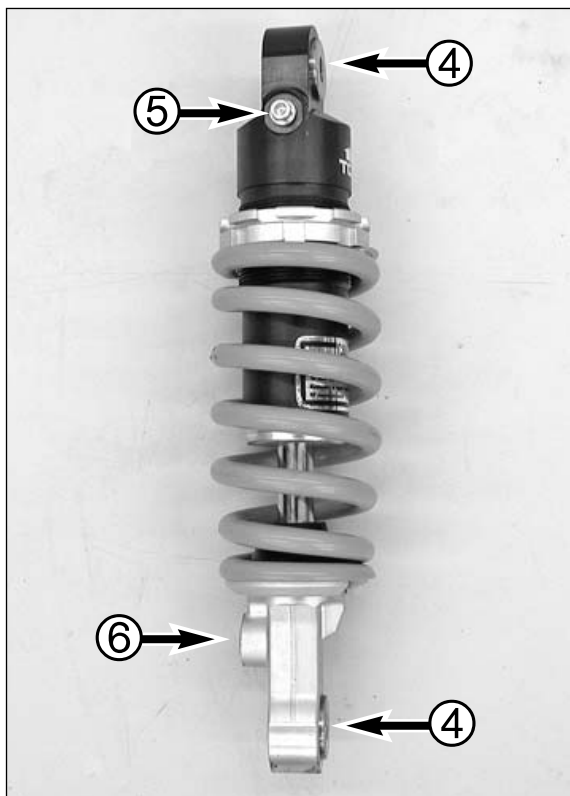


- Remove the upper and lower screw **2** on the shock absorber.
- Unscrew the nut on the swing arm pivot **3** and pull out the swing arm pivot while holding the rear wheel.



- Pull the swing arm towards the back and remove the shock absorber over the rear wheel.

- Mount in the opposite order; tighten the two screws on the shock absorber and the screw on the swing arm pivot to 45 Nm.



NOTE:

- The distance bushings are not equally thick in the 50 SX Junior model, causing the shock absorber to move further to the left. The right distance bushings **4** will protrude from the shock absorber, the left bushings will lie flush.
- The filling screw **5** must point towards the rear and the rebound adjustment **6** to the left.

!

CAUTION

!

IF THE SHOCK ABSORBER IS MOUNTED WRONG IN THE 50 SX JUNIOR MODEL OR IF THE DISTANCE BUSHINGS ARE NOT PRESSED IN CORRECTLY, THE SPRING WILL BRUSH AGAINST THE SWING ARM AND IT WILL NOT BE POSSIBLE TO CHANGE THE REBOUND SETTINGS.

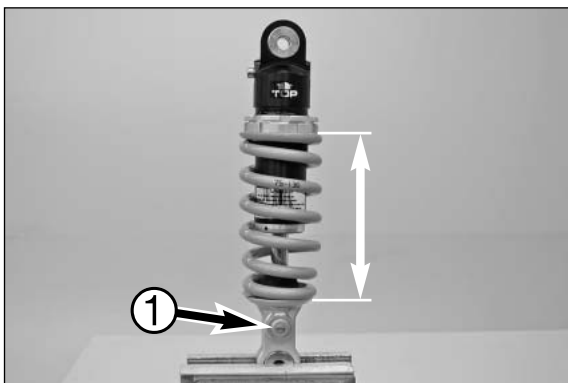
DISASSEMBLING/ASSEMBLING THE SHOCK ABSORBER 4

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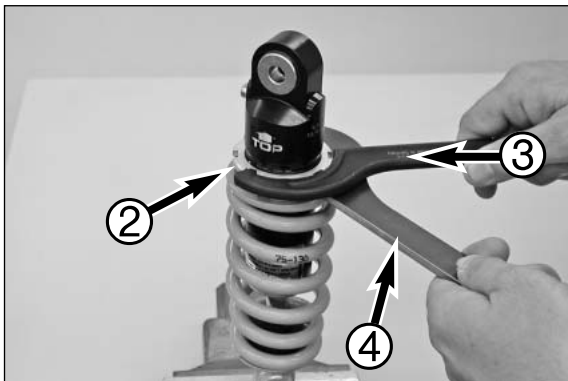
DISASSEMBLING THE SHOCK ABSORBER	4-2
DISASSEMBLING THE PISTON ROD	4-4
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CHECKING THE SHOCK ABSORBER PIPE	4-7
CHECKING THE PISTON ROD	4-7
REPLACING THE HEIM JOINT	4-8
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Disassembling the shock absorber

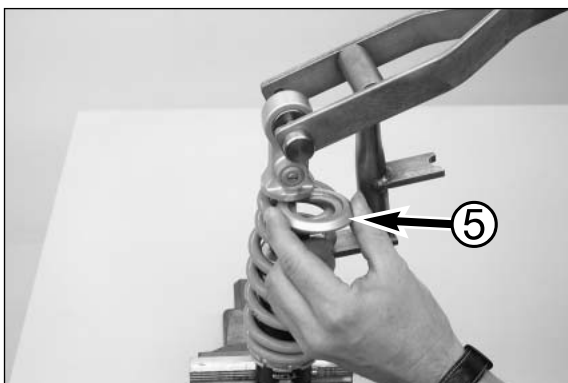
- Clamp the shock absorber in a vise.
- Write down the spring preload.
- Write down the rebound settings, counting the clicks while turning in a clockwise direction.
- Completely unscrew the adjusting screw ❶ in a counterclockwise direction.



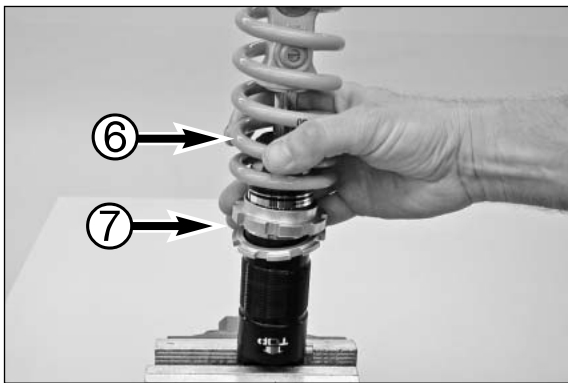
- Loosen the counter ring ❷ with T304 ❸, holding the adjusting ring with T1533 ❹ if necessary.
- Turn the counter ring and adjusting ring all the way to the top.
- Turn the shock absorber around.



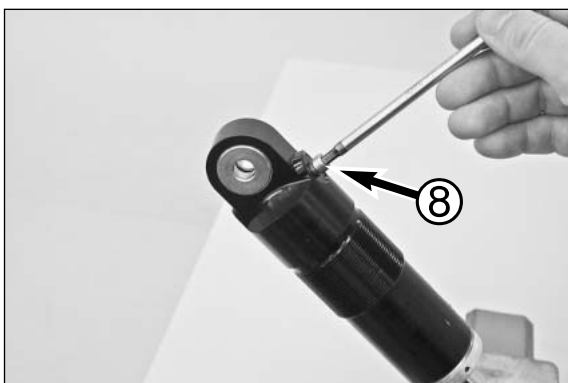
- Press the spring down with special tool T101S and pull out the spring retainer ❺.

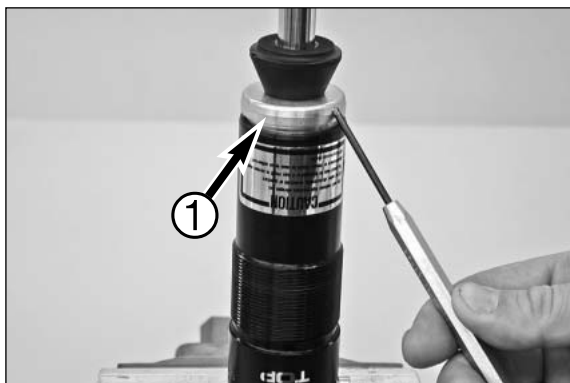


- Remove the spring ❻ and both rings ❼.



- Hold or clamp the shock absorber as shown in the photo.
- Slowly open the filling screw ❸ (AH 4 mm) to allow the nitrogen pressure to escape.
- Remove the screw completely and drain the shock absorber oil in a suitable container.





- Pry the cap ❶ off the pipe with a suitable tool.



- Press the adapter ❷ down (will require some exertion!) and remove the lock ring ❸.

NOTE: the lock ring has a smooth area where you can apply the screwdriver for leverage.

! **CAUTION** !

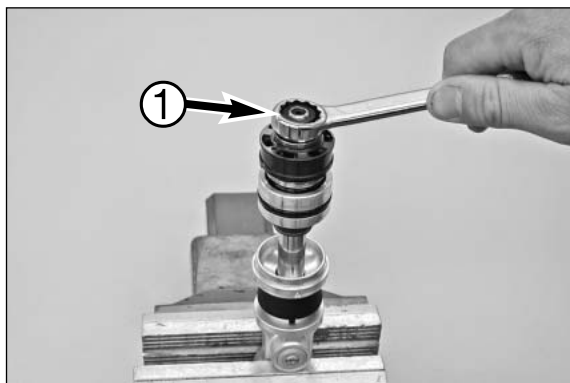
DO NOT SCRATCH THE INSIDE OF THE PIPE SINCE YOU WILL DAMAGE THE O-RING DURING ASSEMBLY/OPERATION.



- Firmly but carefully pull the piston rod up and out of the shock absorber.
- Remove the piston ring ❹.

Disassembling the piston rod

- Clamp the piston rod in the vise (see photo).
- Loosen the piston rod nut ❶ (A/F 17 mm).

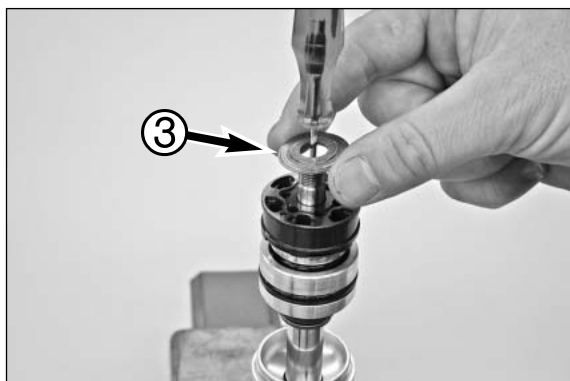


- Remove the shim ❷ (10x22x2.5 mm).



- Remove the set of shims ❸ from the rebound.

NOTE: to prevent the set of shims from falling apart, slide all of the shims onto a screwdriver and set aside.



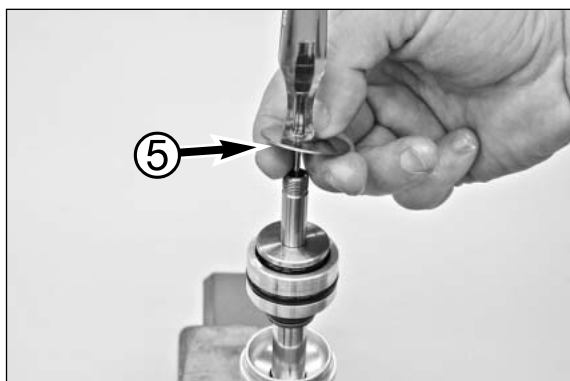
- Remove the piston ❹ from the piston rod.

NOTE: some of the rebound shims may stick to the bottom of the piston; detach them from the piston but leave them on the piston rod.



- Remove the set of shims ❺ on the compression.

NOTE: to prevent the set of shims from falling apart, slide all of the shims onto a screwdriver and set aside.

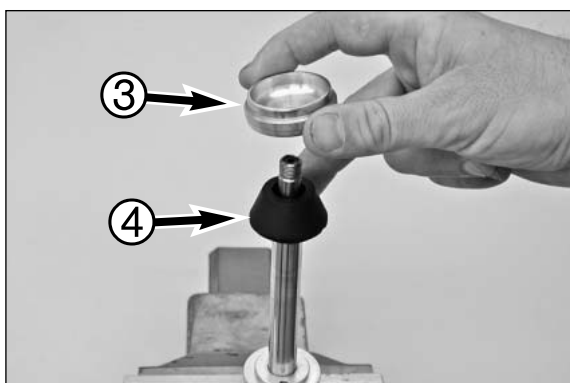




- Remove the shim (10x28.5x4 mm) ❶.



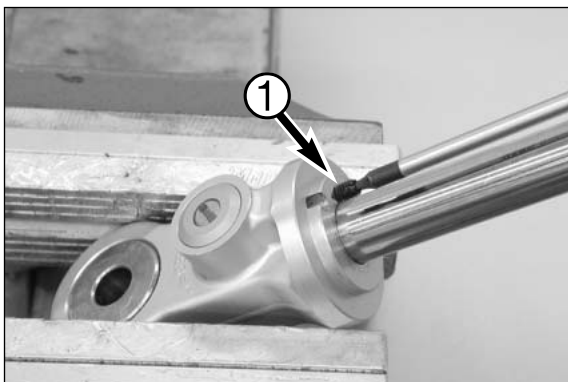
- Remove the adapter ❷.



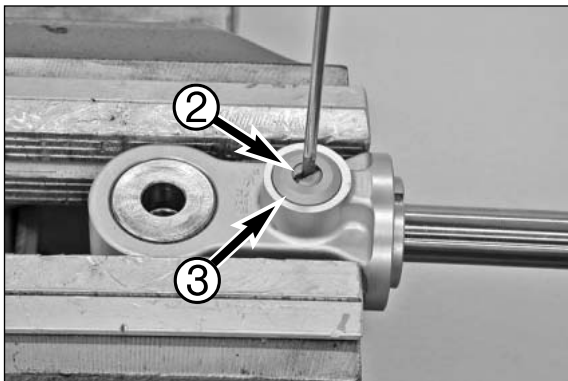
- Remove the cap ❸ and the rubber buffer ❹.

Disassembling/assembling the rebound adjustment

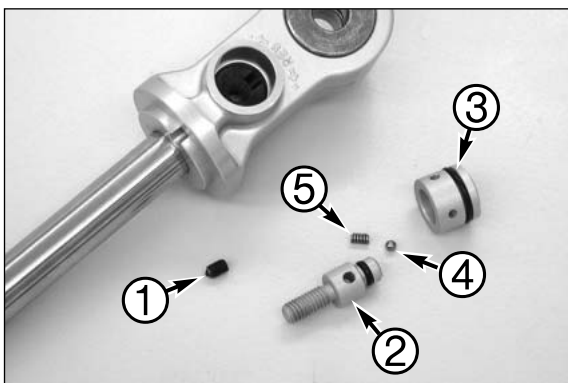
- Clamp the shock absorber support in the vise as shown in the photo.
- Loosen and remove the AH fixing screw ❶ (A/F 2 mm).



- Turn the rebound adjustment ❷ in a counterclockwise direction until it can be removed together with the rebound cap ❸.



- Pull the rebound adjustment ❷ out of the rebound cap ❸; remove the balls ❹ and spring ❺.
- Check all parts for damage and wear, clean and assemble again; replace the O-rings and grease with T158.



NOTE:

- Hold the spring in place in the rebound adjustment with some grease prior to mounting.
- Mount in the reverse order as dismounting.
- Mount the rebound cap and turn together with the rebound adjustment until the AH fixing screw engages in one of the holes in the rebound cap and can be screwed in.

**Checking the shock absorber pipe**

- Check the pipe's bearing surface. If necessary, polish the bearing surface with sandpaper, 600 grit.
- Measure the inner diameter at both ends and at the center of the pipe

Maximum diameter: 36.15 mm

- Make sure the inner surface of the shock absorber pipe is not scratched, otherwise the O-ring will be damaged.

**Checking the piston rod**

- Always replace the piston rod if there are visible scratches or dents on the piston rod's bearing surface; if this is the case, also replace the adapter.
- Measure the diameter of the piston rod, turn the piston rod 90° and measure again.
- Repeat these measurements at different parts of the piston rod.

Maximum diameter: 13.98 mm

Minimum diameter: 13.93 mm

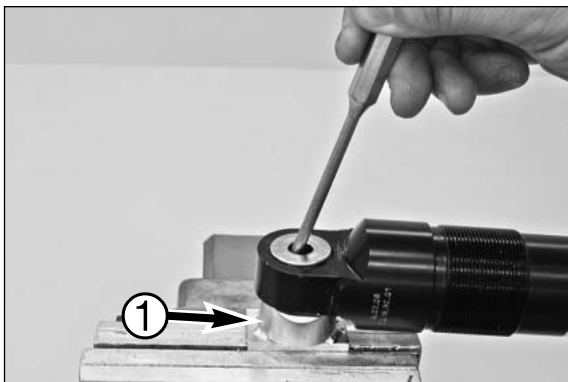
- Measure the piston rod runout, turning the piston rod 360°.

Maximum runout: 0.08 mm.

Replacing the heim joint

NOTE: the procedure for replacing the heim joint in the shock absorber pipe is described below. The procedure is identical for the heim joint in the piston rod.

- Using T1207S ❶ as a support, tap out the distance bushing from the opposite side using a suitable tool.



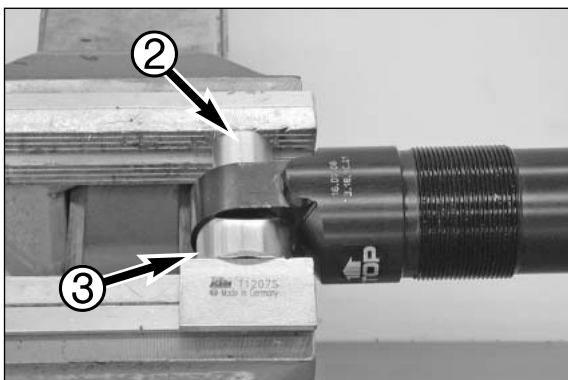
- Turn the shock absorber over and remove the seal ring.
- Tap out the opposite distance bushing and also remove the other seal ring.



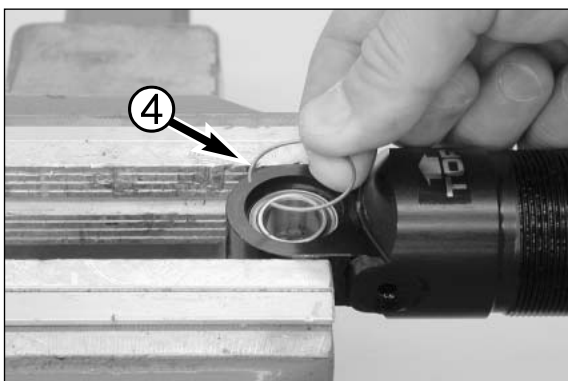
NOTE: usually the lock rings cannot be dismantled due to the position of the heim joint. If you press the heim joint towards one of the lock rings with T1207S, you will be able to remove the other lock ring.

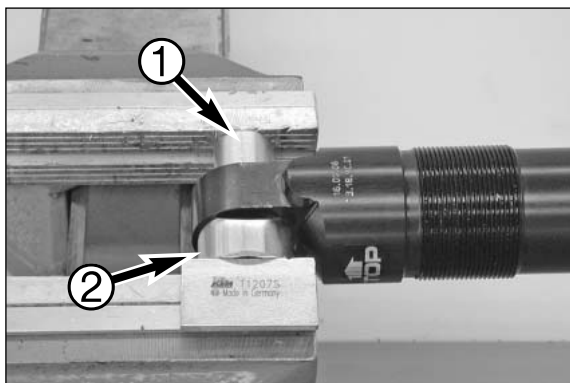


- Insert one side of the punch ❷ on T1207S into the heim joint, apply the pressing sleeve ❸ on T1207S on the opposite side and press with the vise.

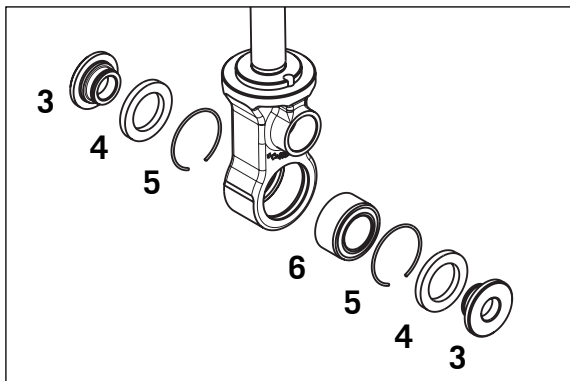


- Lift the lock ring ❹ out of the groove with a sharp tool (needle) and remove.



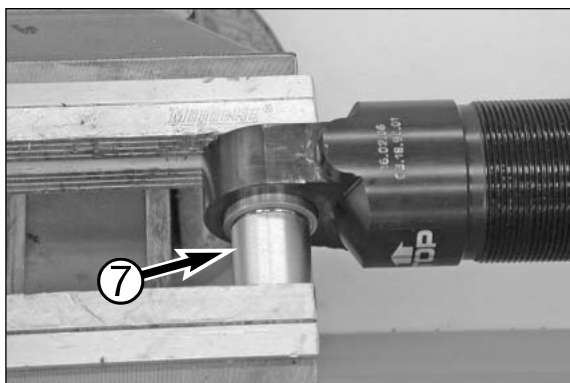


- Insert one side of the punch ① on T1207S into the heim joint, apply the pressing sleeve ② on T1207S on the opposite side and press with the vise.



Heim joint components:

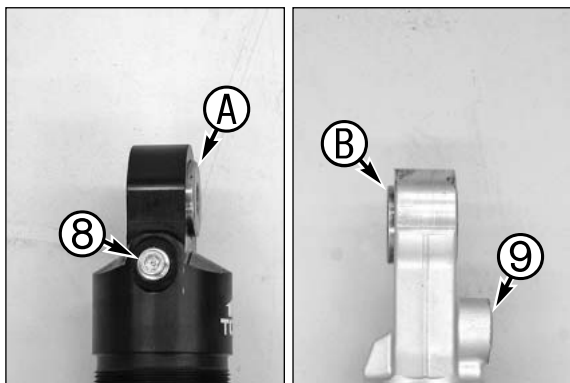
- Distance bushing ③
- Seal ring ④
- Lock ring ⑤
- Heim joint ⑥



- Insert a new heim joint with the chamfer first in the shock absorber and press in all the way to the lock ring with T1207S ⑦.
- Remount the 2nd lock ring.
- Mount both seal rings ④, press in both distance bushings ③ with the vise until flush.

NOTE:

- The distance bushings are not equally thick in the 50 SX Junior model, causing the shock absorber to move further to the left. The right distance bushings ③ will protrude from the shock absorber, the left bushings will lie flush.
- After you press in the distance bushings, make sure the thicker distance bushing ① in the shock absorber pipe points to the right when the filling screw ⑧ points up; the thicker distance bushing ② in the piston rod is opposite the rebound adjustment ⑨ (see photos).

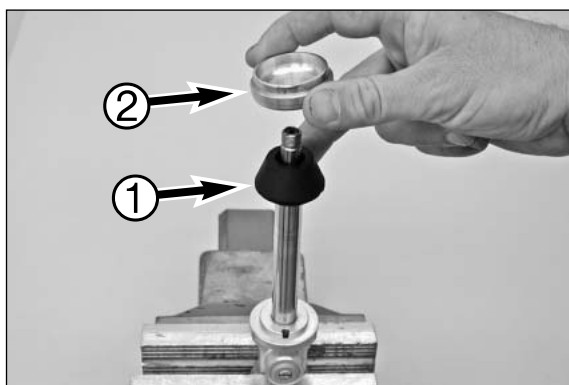


!

CAUTION

!

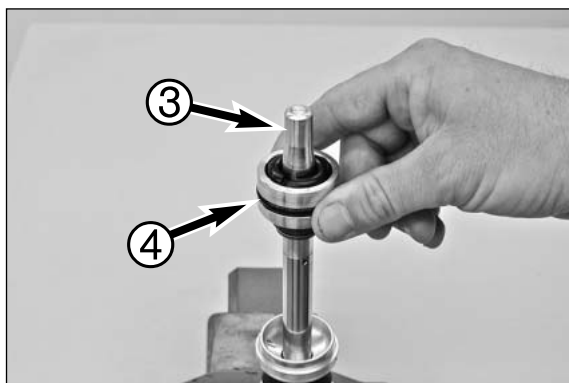
IF THE DISTANCE BUSHINGS FOR THE 50 SX JUNIOR MODEL ARE NOT PRESSED IN CORRECTLY, THE SPRING WILL BRUSH AGAINST THE SWING ARM.



Assembling the piston rod

- Clamp the piston rod in the vise (see photo).
- Slip on the rubber buffer ❶ and cap ❷.

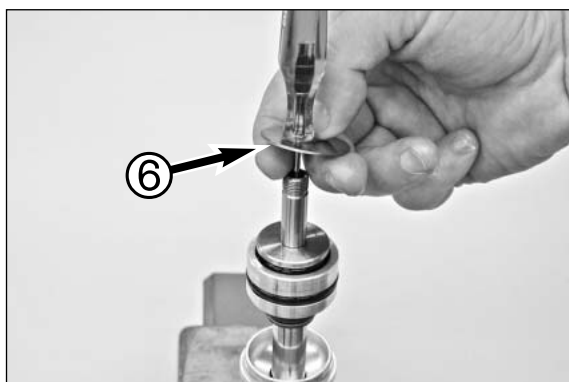
NOTE: Mount the rubber buffer and cap with the larger diameter facing down.



- Slide T313 ❸ over the piston rod and oil lightly.
- Lubricate the seal ring on the adapter with T625.
- Carefully slide the adapter with the seal ring facing down over T313 onto the piston rod; remove T313.
- Lubricate the O-ring ❹ on the adapter with T158.

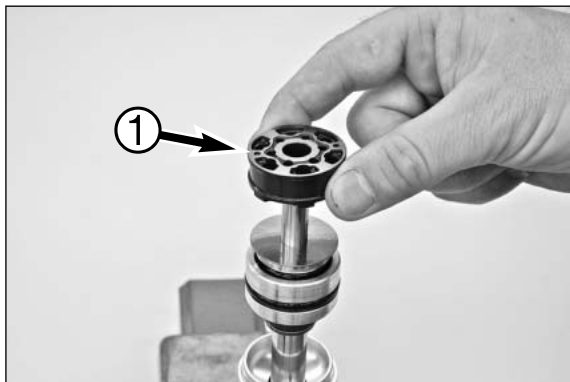


- Slide on the shim ❺ (10x28.5x4 mm) with the rounded side first.



- Mount the set of shims ❻ for the compression.

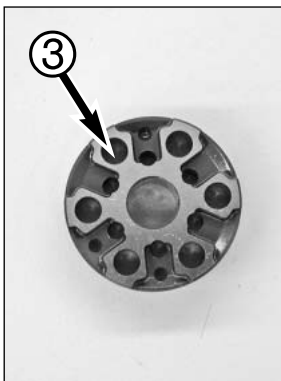
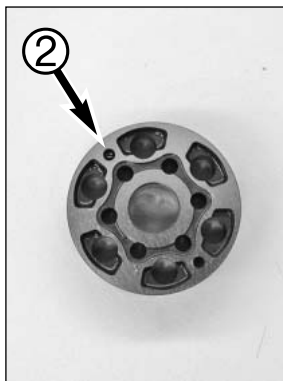
NOTE: mount the shims with the larger diameter facing down.



- Slide on the piston ①.

NOTE:

- Upper view of the piston ②, lower view of the piston ③.
- Before you mount the piston, place on a level surface and polish both sides using 600 grit sandpaper.



- Mount the set of shims ④ for the rebound.

NOTE: mount the shims with the smaller diameter facing up.



- Slide on the shim ⑤ (10x22x2.5 mm).



- Apply T152 to the thread on the piston rod, screw on the piston rod nut (A/F 17 mm) and tighten to 30 Nm.

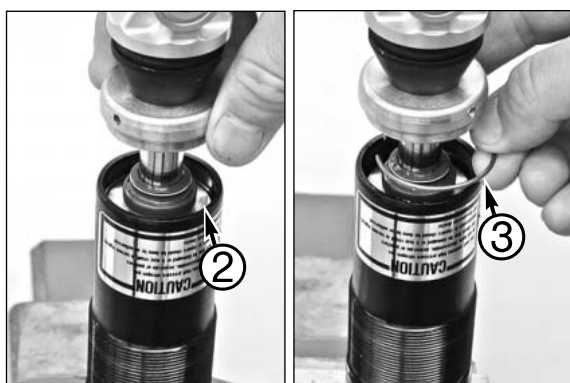


Assembling the shock absorber

- Mount the filling screw with a new sealing washer and tighten.
- Add fresh shock absorber oil 5018.0466 up to 55 mm under the upper edge.



- Mount the piston ring ❶ in the piston groove and lubricate with shock absorber oil.
- Carefully insert the piston rod and press the adapter ❷ in far enough to be able to mount the lock ring ❸.



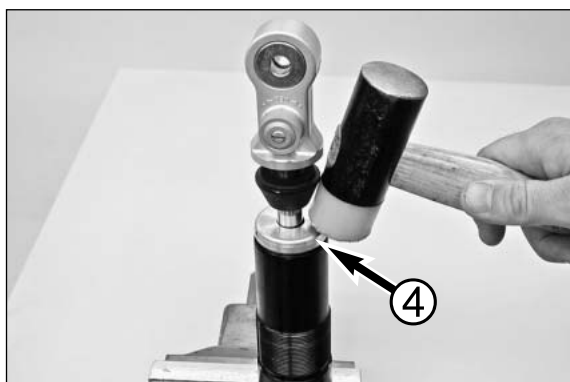
- Mount the lock ring ❸.

!

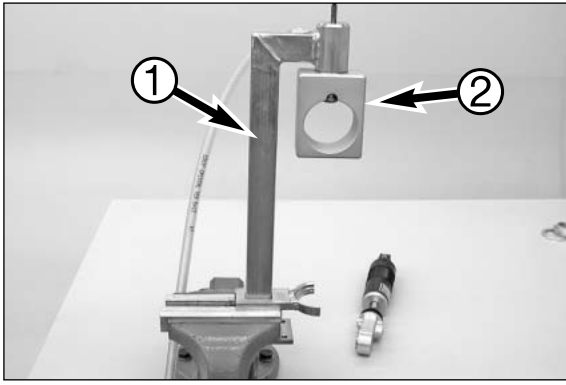
CAUTION

!

FIRST INSERT THE CLOSED PART OF THE LOCK RING, THEN THE TWO ENDS TO AVOID SCRATCHING THE SURFACE OF THE PIPE UNDER THE GROOVE AND DAMAGING THE O-RING WHEN INSERTED OR IN OPERATION.

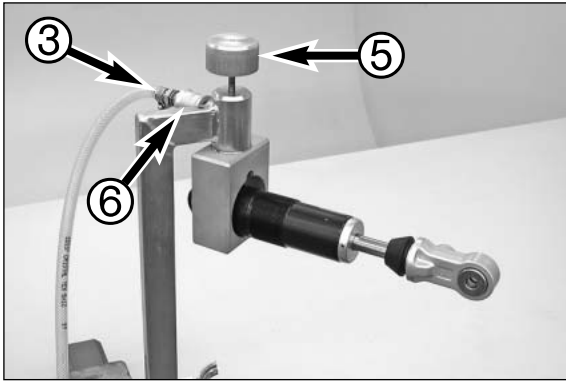


- Use a plastic hammer to evenly tap on the cap ❹.



Adding nitrogen

- Clamp the nitrogen filling device T170S1 ① in a vise as shown in the photo and screw on the insert T169 ②.



- Attach the nitrogen bottle to the port ③ on T170S1.

- Set the pressure regulator ④ on the nitrogen bottle to 10 bar.

- Turn in the filling screw on the shock absorber about 2 turns but do not tighten.

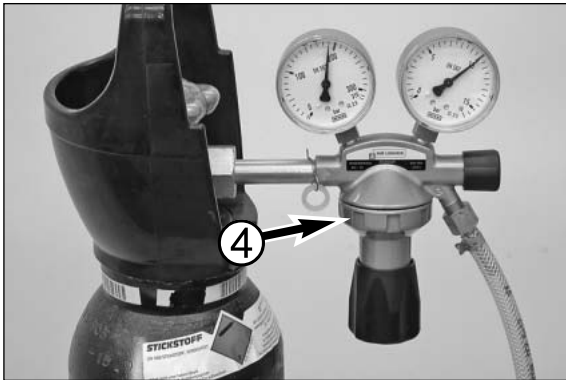
- Slide the shock absorber in the insert in the bracket and press up.

NOTE: the hexagon head on the knob ⑤ must fit in the Allen head of the filling screw. The filling screw is closed with the knob after filling.

- Move the tap ⑥ into the "Open" position.

NOTE:

- The tap is opened by pushing the sleeve towards the tool T170S1 and closed when pulled away from the tool.
- If any nitrogen escapes, press the shock absorber harder against the gasket on T170S1.



!

CAUTION

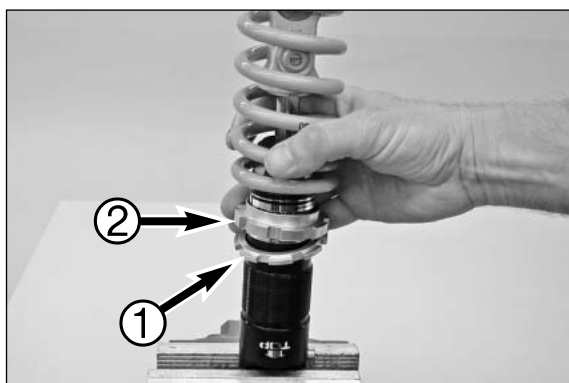
!

WHEN THE TAP IS OPENED, NITROGEN PRESSURE WILL PUSH THE SHOCK ABSORBER DOWN AND CAUSE THE PISTON ROD TO EXTEND.

NOTE: Observe the gauge on the pressure regulator. The pressure will drop slightly when filling. Make sure the shock absorber is filled with 10 bar.

- Fill for at least 15 seconds and then close the filling screw on the shock absorber with the knob ⑤.

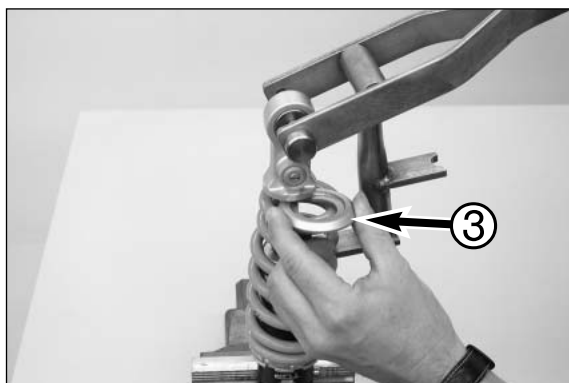
- Move the tap in the closed position and remove the shock absorber from T170S1; make sure the filling screw is tightened.



Mounting the spring

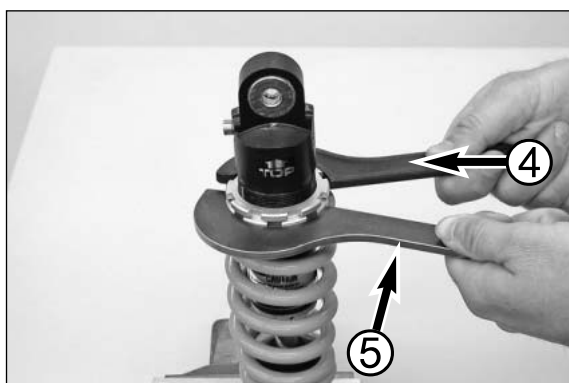
- Clamp upper end of the shock absorber in the vise
- Mount the counter ring ❶ and screw all the way down. The collar must point up (towards the adjusting ring).
- Lubricate the thread on the adjusting ring ❷ with special grease T159 and screw all the way down. The collar must point up (towards the spring).
- Mount the spring.

NOTE: you should be able to read the lettering on the spring when the shock absorber is mounted on the vehicle, i.e. it should be in an inverted position.



- Clamp the spring with special tool T101S and mount the spring retainer ❸, remove T101S.

NOTE: position the spring retainer so that the seam ("joint") is opposite the end of the spring.



- Adjust the spring preload as written down or according to the specifications.
- Tighten the counter ring with T304 ❹, holding the adjusting ring with T1533 ❺ if necessary.
- Adjust the rebound.
- Align the shock absorber pipe and piston rod as shown on page 3-2.